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FREIGHT TRAFFIC I

AUGUST 4, 195

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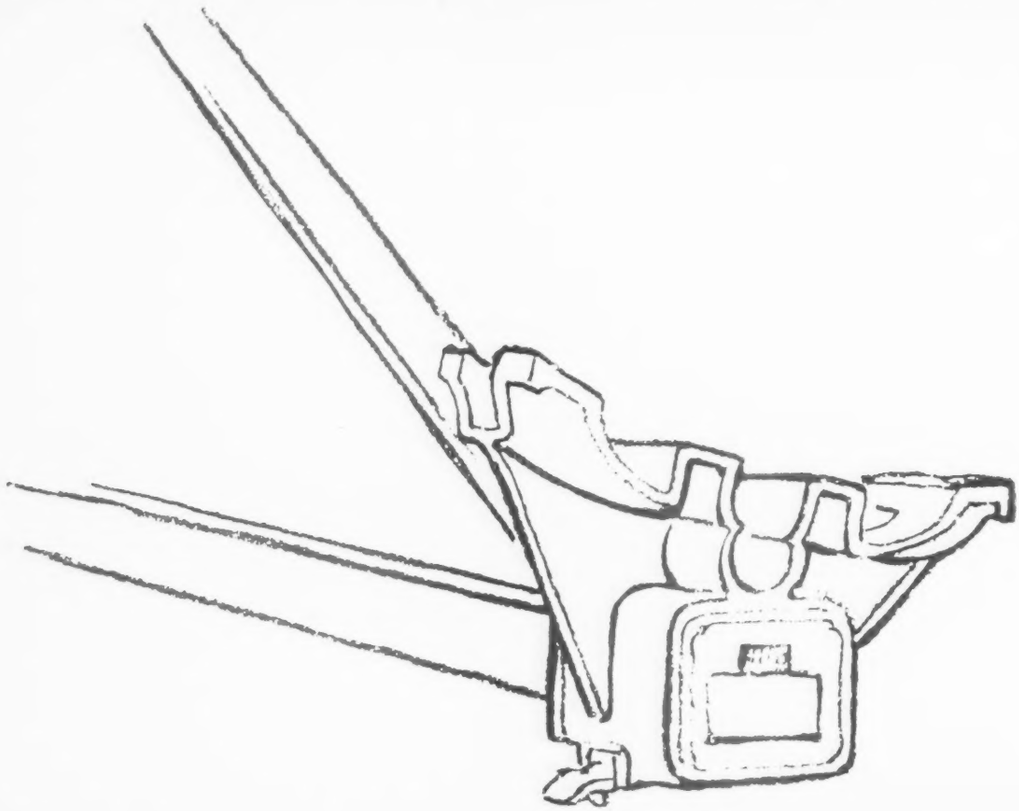

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Vol. 133, No. 5 August 4, 1952

RAILWAY AGE

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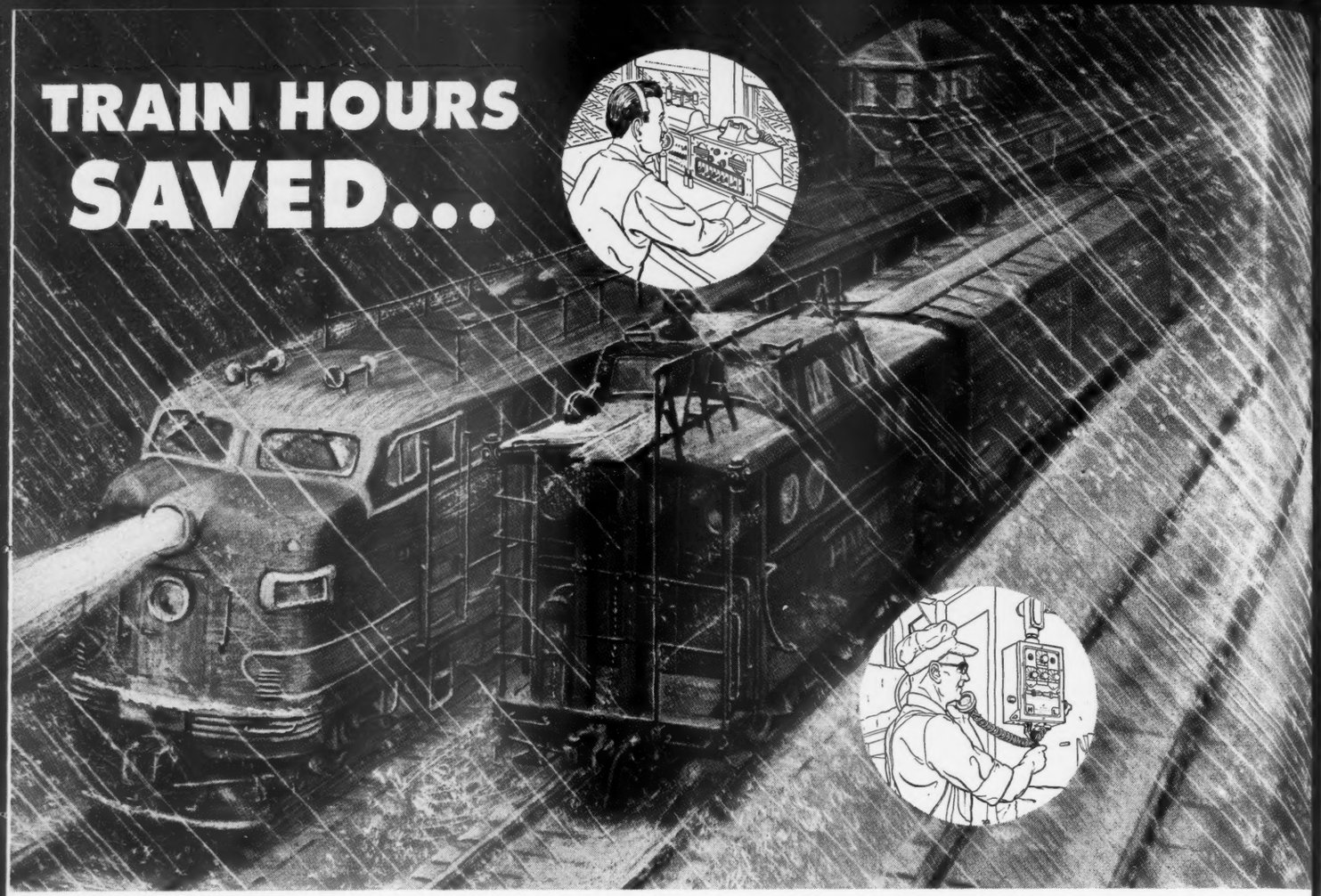

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WEEK AT A GLANCE

CURRENT RAILWAY STATISTICS

Operating revenues, five months
1952 ..... $4,304,214,180
1951 4,179,377,060

Operating expenses, five months
1952 ..... $3,353,273,597
1951 3,288,475,864

Taxes, five months
1952 ..... $ 506,643,596
1951 477,808,199

Net railway operating income, five months
1952 ..... $ 373,798,186
1951 329,174,183

Net income, estimated five months
1952 ..... $ 237,000,000
1951 208,000,000

Average price railroad stocks
July 29, 1952 ..... 63.94
July 31, 1951 ..... 53.22

Car loadings, revenue freight
29 weeks, 1952 20,164,857
29 weeks, 1951 22,091,158

Average daily freight car surplus
Week ended July 26, 1952 39,008
Week ended July 28, 1951 8,074

Average daily freight car shortage
Week ended July 26, 1952 1,620
Week ended July 28, 1951 14,711

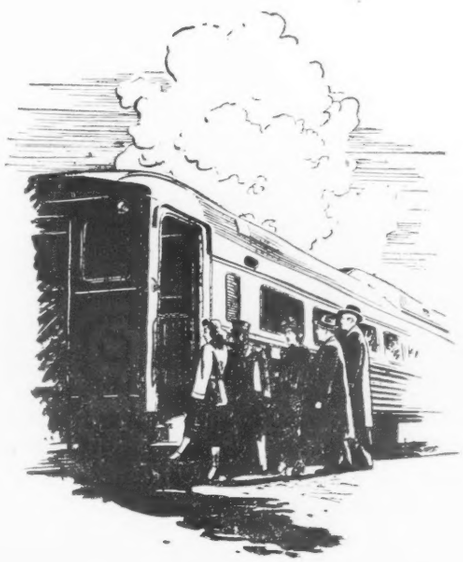
Freight cars delivered
June 1952 6,411
June 1951 9,644

Freight cars on order
July 1, 1952 99,615
July 1, 1951 147,725

Freight cars held for repairs
July 1, 1952 105,255
July 1, 1951 93,866

Net ton-miles per serviceable car per day
May 1952 973
May 1951 1,038

Average number railroad employees
Mid-June 1952 1,224,363
Mid-June 1951 1,295,570



In This Issue . . .

HOW BEST TO HANDLE L.C.L. is a matter of continuing concern to railroads and shippers alike. At least two different reports in the news pages give evidence of shipper interest in the problem; while this issue's first feature article, on page 69, is a discussion by another shipper—A. M. Ribe, Birmingham, Ala., traffic consultant—of a detailed plan for l.c.l. charges. Mr. Ribe's plan is summarized in full, followed by his own more detailed argument in support of part of it; the balance of his statement will be published in a subsequent Freight Traffic Issue.

THE REVOLUTION that has taken place in American railroad motive power is a well-known story. Less well-known, probably, is the equally drastic change that has taken place in the field of industrial motive power—among the thousands of little locomotives used for intraplant switching and other industrial purposes. That story is told, in words, pictures and diagrams, by R. W. Barrell, of the General Electric Company, in the article which starts on page 84.

PRICE REDUCTIONS come as good news in these inflationary times. Effective today (August 4) Electro-Motive is cutting its labor charges to railroad customers on rebuilding of traction motor armatures by 30 per cent, and all other listed rebuilding operations by 10 per cent, at its six factory rebuild plants. The cut doesn't come from lower rates paid to labor (they have gone up 59 per cent since the close of World War II), but from major technological changes in the rebuilding operations.

"GIVE THE SHIPPER WHAT HE WANTS!" That's the theory behind the management and operations of what is, in its present form, one of the country's newest Class I railroads—the Illinois Terminal. The story of this company, including something of its history, of its variegated operations, and of its management philosophy, is told in this issue, beginning on page 72.

In Washington . . .

A SHARP INCREASE in movement of iron ore by rail—to supplement stockpiling time lost to the steel strike in the limited Great Lakes navigation season—is expected to begin almost as soon as normal mining operations can be resumed at the head of the lakes. The loss of ore stockpiles has been variously set at between 10 and 20 million

WEEK AT A GLANCE

tons, and even an intensified movement of ore by rail will only partially replenish these lost reserves. Gondola and hopper cars are likely to become critically short in supply as the full traffic materializes. More details on the projected movement appear in the news.

RAILROAD EXPENDITURE OF $300 MILLION on road and terminal facilities between January 1, 1950, and January 1, 1954, was the defense expansion "goal" proposed last week by the Defense Production Administration—plus another $30 million for expansion of car and locomotive building facilities. A large part of the first "goal"—nearly one-half of it, in fact—is already in sight, with road and terminal expenditures of some $136 million virtually guaranteed by 234 certificates for accelerated tax amortization of such facilities. And D.P.A. has indicated its willingness to help the railroads spend the rest of the money by getting them more certificates. But if government as a whole (not D.P.A. alone, of course) really wants the railroads to expand their facilities, and if it really wants to help them get the money to do so, why doesn't it reverse some of its anti-common-carrier practices, as outlined in the editorial on page 67? Such reversal of basic policy would be far more effective than temporary tax relief.

. . . And Elsewhere

COAL, once considered most "railbound" of all commodities, may not be so forever. The Bituminous Coal Institute, for example, reports successful operation of a belt conveyor, with a capacity of 550 tons per hour, which carries coal more than 2½ miles from a mine near Charleston, W. Va., to a preparation plant, and from there to a barge loading dock on the Kanawha river. Downhill sections of the conveyor, incidentally, drive generators which produce part of the power needed on uphill sections. As another straw in the wind, Joseph Pursglove, Jr., vice-president of the Pittsburgh Consolidation Coal Company, recently told the New York Society of Security Analysts, that: "Recent additional freight rate increases intensify the importance of developing methods of getting coal to market by trucks, rivers, conveyors, aerial tramways, pipelines, and by all possible combinations of these methods. We have high hopes that the pipeline method of coal transportation, which is now under development by Pitt Consol, can be integrated into different combinations of these different transport means to give coal an advantage that has been available only to our competition."

"IT IS POSSIBLE to build freight cars that are better suited to the requirements and conditions of the 1950's instead of cars fundamentally the same as those built 30 years ago." So L. L. Adams (above), manager transportation planning of the United States Steel Company, told the A.A.R. Mechanical Division at San Francisco, in concluding an address in which he urged the railroads to "make the freight car a better traffic-competitive tool." Some of Mr. Adams' specific suggestions for doing so are included in the abstract of his address which begins on page 79.

IT STILL COSTS New York automobile owners nearly twice as much to use the state's highways as it costs owners of heavy trailer-trucks, despite enactment of the state's new weight-distance tax on trucks, according to a study just released by the Citizens Tax League of Rochester. The survey shows that the owner of a 3,450-lb. automobile is taxed at the rate of 23.3 cents per hundred ton-miles of highway use, while the owner of a 60,000-lb. trailer-truck still pays only 14 cents. Farmers and local merchants operating light panel or pick-up trucks, on the other hand, pay about 25.6 cents for each 100 ton-miles, or nearly double the amount paid by the big commercial vehicles.

SALE OF PROPERTY along Philadelphia's Market street, following the razing of old Broad Street Station, will, it is said, produce about $20 millon for the Pennsylvania. But even that bonanza won't be enough to offset what the road lost as a result of the prolonged steel strike. Its revenue loss was estimated at $17 million for June alone, with a still larger figure likely to be reported for July.

All-Rail Ore Movement Shapes Up, D.T.A. Report

Plans for daily movement of 450 cars of iron ore from the Mesabi range were "rapidly taking shape" last week as the Defense Transport Administration sought rapid resumption of ore shipments following the end of the steel strike.

James K. Knudson, D.T.A. administrator, expressed hope that such an all-rail movement of ore would add four million tons to the winter stockpile before the close of the shipping season. About 20 million tons of iron ore were lost, he said, because of the 53-day strike.

Mr. Knudson held a July 25 meeting with representatives of the Great Lakes shipping industry to discuss plans for moving a maximum amount of ore down the lakes during the remainder of this year. He asked that they place "major emphasis" on ore movements; and suggested also that perhaps some commodities which ordinarily go down the lakes can be diverted to create more room for ore.

The D.T.A. administrator advised the group that his agency will contact various railroads "to see that they furnish sufficient cars at lower lake ports to keep the ore moving to mills from the vessels," and also to make sure they have adequate thawing facilities so loading may continue for either boat or all-rail movement when freezing weather is encountered.

Following this July 25 meeting, Mr. Knudson announced that the "wholesome response" by the industry made it unnecessary for the government to set up a "distasteful permit and priority system."

"Industry committees are prepared to take over, making it unnecessary for the government to step in," he said. "There will be no orders from us at present."

Mr. Knudson went on to say that in the event of an early freeze on the lakes, ice breakers may be used to lengthen the shipping season. He noted also that D.T.A. has asked the Coast Guard to extend until September 30 its waiver of summer load lines and summer emergency load lines for vessels operating on the Great Lakes.

Army Outlines Role Of New Zone Offices

The Department of the Army has advised the railroads that its four new zone transportation offices will be concerned principally with domestic traffic management of Army freight.

Functions of the new offices will include the routing of domestic freight traffic, controlling operation of Army owned freight cars used in interchange service, assuring efficient utilization of commercial carriers' equipment, prevention of loss and damage, and adjudication and advice in connection with loss and damage claims and claims pertaining to freight charges.

As a general policy, no limitations will be placed on the maximum size of domestic freight shipments which the zone offices may route, the Army said. There will be a minimum limitation, with shipments under the prescribed minimum being routed by local transportation offices at depots and other field installations.

First of the zone offices was scheduled to open August 1 at St. Louis. Other offices will be opened at 30-day intervals at Pittsburgh, Memphis, and Salt Lake City *(Railway Age,* June 23, page 87).

D.P.A. Sets Goal for Road And Terminal Facilities

A defense expansion "goal" for railroad terminal and road facilities was announced last week by the Defense Production Administration. The program calls for $300,000,000 in new facilities and additions between January 1, 1950, and January 1, 1954.

This goal provides the basis on which D.P.A. grants accelerated amortization certificates for terminal and road facilities. Since January 1, 1950, D.P.A. has granted 234 such certificates, with a total value of $136,000,000.

Another goal of $30,000,000 has been set for production facilities for railroad equipment. As of July 15, this goal was already two-thirds complete. Builders of locomotives, freight cars and other equipment had received fast write-off certificates totaling $20,000,000 in connection with expanding their production facilities.

The "railroad and terminal facilities" included in the $300,000,000 expansion goal include the following: Diesel servicing facilities, industrial (spur) tracks, passing tracks and extensions, centralized traffic control systems, classification yards, repair and construction

shops, freight stations and terminals, and dock terminal facilities.

D.P.A. previously approved a production goal for the construction of freight cars (*Railway Age*, April 28, page 14). As of July 15, tax certificates for 248,000 freight cars had been issued by D.P.A.

Truckers Propose Bulwinkle Pact on Section 22 Rates

Motor carriers which are members of the Middle Atlantic Conference have applied to the Interstate Commerce Commission for approval of a Bulwinkle-Act agreement under which they would establish joint arrangements for the handling of Section 22 quotations on government traffic. The proposal has been docketed as Section 5a Application No. 41.

The contemplated arrangement would establish a sub-group within the conference's present organization. The application explained it this way: "We are constituting our standing rate committee a medium through which section 22 quotations on government traffic can be more expeditiously and satisfactorily handled for the motor common carriers in the areas in which Middle Atlantic tariffs apply."

The application also said that the proposed set-up "is one which, pursuant to the wishes of the Department of Defense, will be separate and apart from the normal activities" of the conference.

Roads Want to Reduce Seattle-Portland Service

Three railroads have asked the Interstate Commerce Commission for authority to reduce the number of joint passenger trains which they operate between Seattle, Wash., and Portland, Ore.

The roads are the Northern Pacific, the Great Northern and the Union Pacific. They told the I.C.C. that elimination of a train in each direction daily is "in the interest of economy of operations."

Effective April 16, the Post Office Department began transporting all mail, except rail-post office, by motor vehicle between Seattle and Portland. The roads already have discontinued the second section of Trains 401 and 402, and now propose to take off trains 403 and 404. They said the loss of mail and other head-end business makes the step necessary.

Overnight service between the two cities will continue to be provided. The roads have operated Seattle-Portland joint passenger trains since 1925.

Motor Carrier Revenues And Expenses Up in 1951

Last year's four quarterly returns from 1,653 Class I intercity motor carriers showed a 12.4 per cent increase in operating revenues, as compared with 1950. During the same period there was a 15.2 per cent increase in their total expenses.

The motor carriers had a 7.8 per cent increase in "tonnage transported," and a 7.3 per cent increase in "truck and tractor miles." These figures were compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission, and were published in an article in the latest "Monthly Comment." A condensed summary of the article appeared on the "Week at a Glance" page (8) of the July 21 *Railway Age*.

Operating ratio for these motor carriers of property advanced from 93 per cent in 1950 to 95.4 per cent in 1951. Net income for the truckers in 1951 amounted to $58.9 million, a drop of 40.8 per cent from the $99.6 million reported in 1950.

The I.C.C. bureau said the 7.8 per cent increase in truck tonnage in 1951 compares with an increase of 8.6 per cent in tons of revenue freight carried by Class I railroads.

Jasper Park Lodge to Continue in Operation

The Canadian National's Jasper Park Lodge will continue in operation for the balance of the season, despite the $1-million fire which destroyed the main building on July 16 (*Railway Age*, July 21, page 17).

Robert Sommerville, general manager of Canadian National Hotels, made this statement on July 17, after it had been found that kitchen and dining room facilities still available are proving satisfactory. All bedrooms, except the eight in the central building, are unharmed.

I.C.C. Asked to Revoke Riss' Rights in Ohio

The Ohio Public Utilities Commission has asked the Interstate Commerce Commission to revoke the motor carrier operating rights of Riss & Co. "in and through the state of Ohio."

A complaint filed with the I.C.C. on July 18 charged the Riss company with numerous violations of Ohio traffic laws. There were additional charges that the motor carrier has frequently violated rules and regulations of the state commission.

During the nine-month period from September 18, 1951, through June 20, 1952, Riss drivers were arrested for 104 violations of Ohio traffic laws, the state commission said.

Inspections by P.U.C. investigators resulted in 390 arrests for violations of state commission rules and regulations between January 11, 1950, and June 26, 1952. The commission charged there were 102 other violations during this same period where no arrests were made.

Because of these violations Riss & Co. "is not a fit and proper party to operate as a motor carrier through the state of Ohio under authority of the I.C.C.," the state commission said. It asked that the I.C.C. investigate the "fitness" of Riss & Co., and that an order be entered revoking the carrier's operating rights in Ohio.

Main offices of the Riss company are located at Kansas City, Mo. The Ohio commission said the company does no intrastate business in Ohio, and the commission has no way of keeping Riss trucks off the state highways.

"Non-Operating" Carrier Not Required to File Tariffs

The Interstate Commerce Commission has ruled that "non-operating common carriers" are not required to file tariffs or become parties to published joint rates to and from points on their lines.

The ruling came in a report which accompanied a commission order dismissing a complaint against the "non-operating" Peoria & Eastern, the New York Central, operator of the P&E, and other roads which were named but not actually brought into the case. The complainants were holders of $984,000 (out of a total of $4,000,000) of P&E income mortgage, 4 per cent, non-cumulative bonds.

The complaint (No. 30294) alleged in effect that revenues accruing to the P&E would be higher if the present apportionment plan were abandoned in favor of a set-up under which that road would publish its own tariffs and obtain regular divisions of joint rates on interline traffic. In holding that the P&E could not be required to do the latter, the commission had this to say:

"Section 6(1) [of the Interstate Commerce Act] provides that the schedules which the common carrier subject thereto shall file shall show 'all the rates fares and charges *for transportation* between which property and passengers *will be carried*,' and that copies of such schedules . . . 'shall be kept posted . . . in every depot, station or office of such carrier where passengers or freight, respectively, *are received for transportation*. . . .' Section 6(7) provides that 'No carrier . . . shall engage or participate in the transportation of passengers or property . . . unless the rates or charges upon which the same *are transported* by said carrier have been filed in accordance with the provisions of this part. . .' (Emphasis supplied). It is significant also that preceding the requirement . . . in section 1(4), that every common carrier shall establish reasonable through routes and rates, the same paragraph provides that every such carrier shall 'provide and furnish transportation upon reasonable request therefor.'

"From the foregoing it is apparent that the provisions of the act referred to are directed, not to non-operating carriers, but to carriers actually engaged in the transportation of passengers or property as defined in the act. The Peoria & Eastern is not engaged in such transportation. The operation of its properties is performed wholly by the New York Central, and it is enough that the latter file tariffs and

concurrences . . . for the transportation which it performs between and to and from points on the Peoria & Eastern."

The commission then followed through to conclude that it was without authority to prescribe divisions of revenue for the P&E. Since that company does not and need not file tariffs, "it is not and need not be a party to published joint rates," the report said. "It follows," it added, that divisions to be received by the P&E "cannot be prescribed by us."

The commission also rejected the complainants' alternative plea that it require modification of the NYC-P&E operating agreement "so as to accomplish the same results" sought under the tariff-filing approach. That issue, the commission said, would have to be raised in a proceeding under section 5 of the act.

Chairman Alldredge filed a dissenting opinion, recording his disagreement with the latter determination. He thought the commission should have reexamined the "revenue phases" of the operating agreement which it approved in 1940. Dissents of Commissioners Patterson and Cross were noted, as was the fact that Commissioner Knudson did not participate in the disposition of the case.

Appeals Court Reverses I.C.C. in Wharfage Case

An Interstate Commerce Commission decision involving wharfage allowances at Norfolk, Va., has been reversed by a U. S. Court of Appeals. The case, in litigation since 1944, grew out of the army's taking over two Norfolk piers in World War II.

Railroad tariffs embodied wharfage charges to compensate the carriers for services performed at the piers. These terminal services were actually performed by a public wharfinger, which received allowances from the railroads.

When the army took over the piers in 1942, it decided to handle its own terminal services. It sought allowances from the railroads on the same basis the public wharfinger received before it was dispossessed. The railroads refused. Among other things, they took the position that army operation made the piers "private" facilities.

Failure of the army to obtain wharfage allowances, and refusal by the railroads to resume performance of terminal services, brought the case to the I.C.C. The army claimed reparations. It claimed it was operating "public" piers and offered evidence that it occasionally handled cars of commercial freight.

Division 2 of the I.C.C. found for the army. The full commission reversed this finding by a final vote of six-to-five (*Railway Age*, August 30, 1947, page 57). The matter went to the courts. After technical pleadings led to the Supreme Court and back, a district court judge reviewed the case and upheld the I.C.C.

The latest decision takes the opposite view. The court of appeals, by a two-to-one vote, ruled the I.C.C. order in the proceeding lacked "substantial supporting evidence," and said it must be set aside. The appeals court noted, among other things, that this is the first I.C.C. decision in a reparation case to be accorded judicial review.

Pullman, O.R.C. Reach Agreement; Strike Off

The threatened strike of the Order of Railway Conductors against the Pullman Company (*Railway Age*, July 21, page 17) was cancelled on July 24 as an agreement was reached in their two-year-old wage dispute.

The conductors were granted a 12½-cent basic hourly wage increase retroactive to January 1, plus a "standard railroad cost of living escalator clause and a wage and rules moratorium to October 1, 1953." The strike had been called for July 29 and would have affected all trains carrying Pullman sleeping, parlor or dining cars, inasmuch as railroad passenger conductors were ordered not to work on such trains by the O.R.C.

St. Louis Draymen's Strike Drags On; L.C.L. Hit

A dispute over wages and hours between the A.F. of L. Teamsters and Chauffeurs Union and major motor carriers in St. Louis has tied up local deliveries and transfers of railroad l.c.l. freight, as well as operations of over-the-road truckers in most of the greater St. Louis metropolitan area.

The strike, which involves some 2,700 local delivery drivers and truckmen, began on July 1. Provisions were made early in the tieup to permit uninterrupted handling of certain perishables and government shipments such as mail, munitions and defense production equipment.

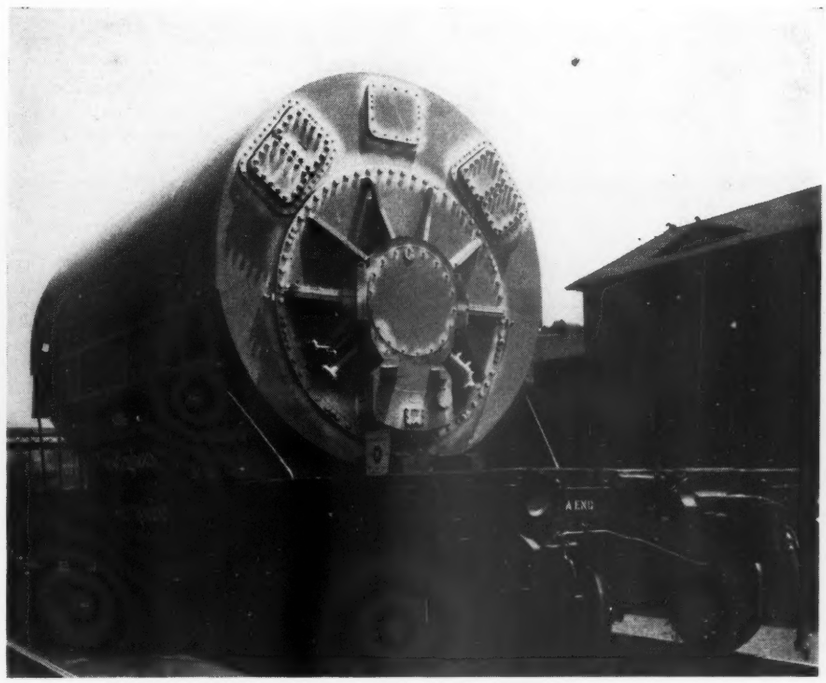
The Ben Gutman Truck Service, Inc., which handles inter-railroad movement

"GO AFTER L.C.L.," MIDWEST SHIPPERS ADVISE RAILROADS

"The railroads say they want l.c.l. traffic, but they don't actively go after it by solicitation," H. B. Spamer, chairman of the Midwest Shippers Advisory Board's L.C.L. Committee, and assistant general traffic manager of Spiegel, Inc., told the board's annual summer meeting in Milwaukee. "Truck rates are now higher than rail, so now is the time to 'go after' the business."

The L.C.L. Committee suggested a four point plan for consideration by the railroads as a means to increase l.c.l. traffic, as outlined in *Railway Age*, May 12, page 65.

Board Chairman John T. Moore, assistant traffic manager of the International Harvester Company, complimented the railroads on their 1952 program for upgrading freight cars to handle this year's bumper grain crop.



TO CARRY LOADS LIKE THIS 163-ton stator—the stationary part of a turbine generator—the Westinghouse Electric Corporation uses this special heavy-duty flat car. The car, built for and owned by Westinghouse, weighs 106,000 lb. and has a 493,000-lb. load limit, carried on 16 wheels.

of l.c.l. traffic on a contract basis, has been halted by the walkout and embargoes have been issued by the Association of American Railroads' Car Service Division on all l.c.l. freight (except that which can be handled by trap car to industries with private sidings) for several major roads. The Gutman firm has been negotiating with the union independently of the motor carrier groups.

I.C.C. Grants More Time For AB Brake Installations

Division 3 of the Interstate Commerce Commission has given railroads and other car owners more time to complete installation of AB brakes on their freight cars. A July 23 order in the No. 13528 proceeding set back the deadline date six months—from June 30, 1952, until December 31, 1952.

The I.C.C. also announced that Commissioner Patterson will hold a September 15 hearing at Chicago in connection with equipping non-interchange cars as required by the commission. Present deadline for equipping such cars is December 31, 1952.

Carriers desiring additional time must notify the I.C.C. before August 25, and be prepared to introduce in exhibit form at Chicago the following information as of July 31, 1952, separated by class or type of cars.

1. Number of such cars owned.
2. Number of such cars unequipped.
3. Number of unequipped cars used in revenue service.
4. Maximum speed at which unequipped cars are operated, in trains or otherwise.
5. Maximum length of trains in which unequipped cars are operated.

Higher Minimum Charges for Sleeper Space

Because the Interstate Commerce Commission "is without authority to require a further postponement," higher minimum charges for Pullman sleeping car accommodations were scheduled to go into effect on August 1, even though the commission has "deferred" its final conclusion as to their "lawfulness."

Tariffs covering the increased fares were originally filed with the commission last December, to become effective January 1, 1952. On December 29, 1951, the commission suspended the new fares to and including July 31 (I. & S. Docket No. 5982). This suspension was vacated as of July 28, but on July 25, between the issuance and the effective date of the vacating order, the Secretary of the Air Force, Department of Defense, petitioned for reconsideration and oral argument.

This petition led the I.C.C. to "defer" its "final conclusion" on the higher fares, even though, as stated above, it is "without authority" to require that their effective date be postponed beyond the seven-month statutory suspension limit which expired July 31.

For lower-berth accommodations, the new minimum charges will be $5 in standard Pullman cars and $3.95 in tourist cars. They will displace minima of $4.05 and $3.20, respectively, and will also apply in lieu of "intermediate" minimum charges which have been in effect. Minimum charges for upper berths and other accommodations will be adjusted to retain their former relationships with lower berth charges.

As the commission's report pointed out, the increased charges will affect

A.R.E.A. TO PARTICIPATE IN ENGINEERING CENTENNIAL

Elaborate plans are being completed for American Railway Engineering Association participation in the "Centennial of Engineering" being held in Chicago this summer.

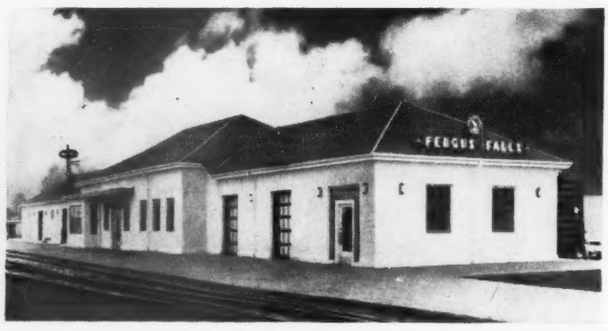
The event commemorates the 100th anniversary of the American Society of Civil Engineers. It includes an extensive engineering exhibit at Chicago's Museum of Science and Industry (which will be maintained there for at least five years); the engineering pageant, "Adam to Atom," to be staged several times daily on the museum grounds; and a convocation of more than 50 national and international engineering societies and associations to be held within the 11-day period from September 3 through September 13. A highlight of the convocation will be an international banquet to be held in the International Amphitheater on September 10, with more than 5,000 persons in attendance.

A 10-day series of symposia on various branches of industry, plus several hundred technical meetings, will bring together many of the world's outstanding engineers. A symposium dealing with engineering achievements of the transport industry will be held on September 8 and 9 and at least one of the sessions will be devoted entirely to railroads.

A.R.E.A. participation in the centennial will center about the transportation symposium and will cover the three-day period of September 8-10.

It is planned that working sessions of all 23 of the association's standing and special committees will be held on the first two days but scheduled clear of certain sessions of the symposium which are of special interest to association members. The final day has been left open to give members an opportunity to visit the engineering exhibit and to attend the international banquet that evening.

A special railroad engineering banquet, to be held in the Palmer House on September 8, has been arranged by A.R.E.A. It will be open to all members and, in addition invitations have been extended to engineers in the mechanical, electrical, signal and communications departments of member roads. H. R. Clarke, chief engineer of the Burlington, and a past president of A.R.E.A., will keynote the theme of the banquet: "The Contribution of Railroad Engineers to the Welfare of the Country Over the Last 100 Years."



AN $80,000 MODERNIZATION of the Great Northern's station at Fergus Falls, Minn., has made the marked contrast in these "before and after" pictures of the same building. The station was enlarged somewhat at the baggage-express end (nearest to the camera) and then given a new roof, doors and windows, heating plant, sanitation facilities, lighting and furnishings. The brick exterior was painted white to contrast with the new roof and trim, which are green. In addition, a new concrete platform, larger than the old timber one, was laid.

overnight travel for "comparatively short distances," i.e., "distances from about 200 to 400 miles." Figures of record indicate that the additional annual revenue realized by Pullman should amount to about $4,300,000; but that the company's 1952 operating deficit is still expected to be "in excess of $15 million."

The Department of Defense opposed the increases.

Freight Car Loadings

Loadings of revenue freight in the week ended July 26 totaled 607,271 cars, the Association of American Railroads announced on July 31. This was a decrease of 1,686 cars, or 0.3 per cent, compared with the previous week; a decrease of 213,205 cars, or 26 per cent, compared with the corresponding week last year; and a decrease of 237,740 cars, or 28.1 per cent, compared with the equivalent 1950 week.

Loadings of revenue freight for the week ended July 19 totaled 608,957 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, July 19

District	1952	1951	1950
Eastern	101,511	136,896	148,076
Allegheny	94,589	168,760	170,476
Pocahontas	48,120	66,205	64,766
Southern	113,448	120,907	123,550
Northwestern	72,242	138,152	137,518
Central Western	121,025	120,142	122,999
Southwestern	58,022	54,316	62,691
Total Western Districts	251,289	312,610	323,208
Total All Roads	608,957	805,378	830,076
Commodities:			
Grain and grain products	66,380	57,682	57,676
Livestock	7,066	6,512	6,931
Coal	105,119	149,441	160,010
Coke	3,662	16,211	14,719
Forest products	47,232	45,942	49,365
Ore	11,344	89,950	84,345
Merchandise l.c.l.	66,843	67,254	80,169
Miscellaneous	301,311	372,386	376,861
July 19	608,957	805,378	830,076
July 12	572,387	779,308	789,406
July 5	447,396	588,159	553,910
June 28	649,172	821,615	783,520
June 21	643,860	832,942	809,971
Cumulative total 29 weeks	20,164,857	22,091,158	20,058,142

EDMUND A. NIGHTINGALE, of the University of Minnesota's School of Business Administration, has been named professor of economics and transportation by the university's board of regents. Professor Nightingale acts as consultant to the director of the Military Traffic Service, Department of Defense, Washington, D.C., in addition to his regular duties at the university.

In Canada. — Carloadings for the seven-day period ended July 14 totaled 80,857 cars, compared with 71,901 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada: July 14, 1952	80,857	28,433
Cumulative Totals July 14, 1952	2,163,641	949,819

Earthquake Wrecks Tunnels On SP's "Valley" Line

Four tunnels on the Southern Pacific's San Joaquin Valley route between Los Angeles and San Francisco were severely damaged during the earthquake that struck near Tehachapi, Cal., on July 21. No early estimate was made of the cost of the damage "because we are bending all of our efforts toward getting the line back in service," an SP spokesman said.

In a statement issued to the press on July 24, the SP said damage to track and tunnels was more severe than first inspections indicated. About three weeks will be required to restore service, according to the latest estimate of company engineers. Meanwhile, passengers are being handled through the area by bus and freight is being rerouted to the "Coast" line, which was undamaged. Passengers are being transferred from trains to buses at Bakersfield, some 25 miles northwest of the quake scene.

The SP said approximately 1,000 men are working on repairs in the damaged area or getting materials and equipment into the territory.

The damage most difficult to repair is in four tunnels which have a combined length of 2,565 feet. One, 361 feet long, is so badly damaged that it will be abandoned and a 2,000-ft. line built around it. Another tunnel, 334 feet

(Continued on page 96)

ORGANIZATIONS

T-M-K Shippers Board to Hold L.C.L. Panel Discussion

A panel discussion on l.c.l. freight problems confronting the railroads will feature the 94th regular meeting of the Trans-Missouri-Kansas Shippers Board, to be held in Tulsa, September 25.

F. W. Monahan, chairman of the board's l.c.l. committee, and traffic manager for the Dow Chemical Company, Madison, Ill., has announced that merchandise traffic officers from eastern, southern, and western roads have been invited to attend, and that "a prominent industrial traffic manager of national stature" will preside. "Those in attendance," Mr. Monahan said, "will be encouraged to place before the panel questions which will draw from the carriers' representatives an expres-

NEW SERVICES AND PUBLICATIONS OF INTEREST TO SHIPPERS

BALTIMORE & OHIO—*Industrial Development department has issued a bulletin describing a 4,500-acre industrial site in the Baltimore area.*

NEW YORK CENTRAL—Has made following changes in its scheduled l.c.l. car lines:

Car lines discontinued:

Syracuse, N.Y., to New York City (Barclay st.); Syracuse to E. Cambridge, Mass.; Niagara Falls, N.Y., to New York City (Barclay st.), and Springfield, Mass.; Springfield, Ohio, to Buffalo, N.Y. (Erie); Cleveland to Buffalo (Erie); Detroit to Buffalo (Erie); and Utica, N.Y., to Croxton Tfr., N.J. (Erie).

New car lines:

Poughkeepsie, N.Y., to Chicago (tri-weekly); Hudson, N.Y.-Poughkeepsie to Camden, N.J. (PRR); Cincinnati to Hartford, Conn. (NYNH&H); Springfield, Ohio, to Hornell, N.Y. (Erie); Cleveland to Hornell (Erie); Detroit to Hornell (Erie); and Utica to Jersey City, N.J.

In addition, all l.c.l. freight from the Boston & Maine, destined to points on the NYC, now is loaded to Utica Tfr., N.Y.

NEW YORK, NEW HAVEN & HARTFORD—*A new Griffin Plan type of operation went into affect at Bridgeport, Conn., on August 1.*

PENNSYLVANIA—Reports that "in the interest of improved service" it has closed Philadelphia Transfer. Business formerly handled there now is split between Philadelphia (Federal Street station), Baltimore, Trenton, N.J., and Camden, N.J. In general, business from the South is being handled at Baltimore and Trenton; business from the North and West at Trenton, Camden and Federal st.

ST. LOUIS-SAN FRANCISCO—*Has opened new traffic offices at Amarillo, Tex.; Shreveport, La.; Savannah, Ga.; Nashville, Tenn.; and Louisville, Ky.*

sion as to their proposals for dealing with the l.c.l. problems confronting them. Efforts will be directed toward development of constructive criticism. Although the panel will be held as a part of the board's regular meeting, the subject will be dealt with on a national basis."

The purpose of the panel discussion, Mr. Monahan explained, is to seek unity of thought and action from the carriers on the problem, while leaving with them the shippers' views as to what may be done to remedy their ills.

Further details concerning the panel and its members will be announced later.

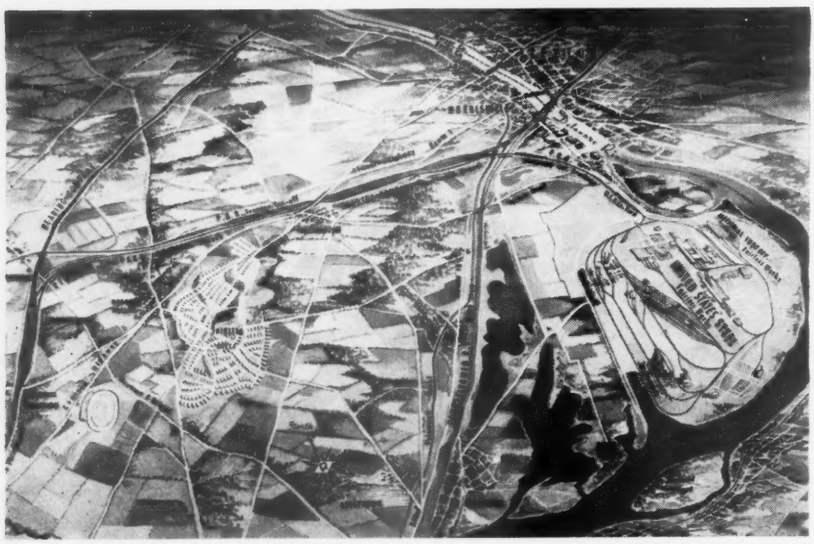
At the 30th annual meeting of the **Central Western Shippers Advisory Board,** held recently at Zion Lodge in Zion National Park, Utah, the following officers were elected to serve for the coming year: General chairman—L. J. Bacquet, traffic manager, Gooch Milling & Elevator Co., Lincoln, Neb.; vice-general chairman—Lowe P. Siddons, traffic manager, Holly Sugar Corporation, Colorado Springs, Colo.; general secretary—R. W. Bagby, traffic manager, Dempster Mill Manufacturing Company, Beatrice, Neb.; alternate general secretary—W. G. Koplin, traffic manager, Salt Lake Hardware Company, Salt Lake City. The board will meet next at Omaha, Neb., on December 8 and 9, and its next annual meeting will be in Denver in June 1953.

F. O. Divisek, chief claim agent of the Denver & Rio Grande Western, has been elected president of the **Association of Railway Claim Agents,** to succeed W. J. Crecelius, general claims agent of the Louisville & Nashville. F. L. Johnson, general claim agent of the Gulf, Mobile & Ohio, has been reelected secretary-treasurer; while vice-presidents for 1952-1953 are F. H. Hitchcock, general claim agent, Coast lines, Atchison, Topeka & Santa Fe; H. C. Ozburn, assistant general claim agent, Central of Georgia; and H. H. Hough, general claims adjuster, Canadian Pacific. The association's 63rd annual meeting, at which the foregoing officers were chosen, was held at Montreal last June, with the Canadian Pacific and the Canadian National as host roads. Attendance was approximately 400, while the program included addresses or papers by L. D. Phelan, general adjuster, Chicago, Milwaukee, St. Paul & Pacific; Norman J. MacMillan, vice-president and general counsel, CNR; Don E. Mumford, superintendent of safety, New York Central; Eugene E. Sparrow, chairman, Ontario Workmen's Compensation Board; Dr. John R. Norcross, orthopedic specialist, of Chicago; Wayne Ely, division counsel, GM&O; and Dr. Louis Schwartz, medical director (retired), U. S. Public Health Service. Capt. John R. Nutter, supervisor of safety and claims of the Kentucky & Indiana Terminal, was chairman of the Topics committee. The association voted to hold its next meeting at the Hotel Statler, Detroit, May 20-22, 1953, and its 65th annual meeting at Los Angeles in 1954.

Harold Lee Maxwell, supervisor of mechanical engineering consultants for E. I. du Pont de Nemours & Co., Wilmington, Del., has been elected president of the **American Society for Testing Materials.** Norman L. Mochel, manager, metallurgical engineering, Westinghouse Electric Corporation, Philadelphia, has been elected vice-president.

Fred B. Hank, general manager at New York of the New York Central, has been elected chairman of the **General Managers' Association** of New York, to succeed Perry M. Shoemaker, who has resigned coincident with his assumption of the presidency of the Delaware, Lackawanna & Western. Paul K. Partee, general manager of the New York Terminal region of the Baltimore & Ohio, has been named vice-chairman of the association.

The August golf outing of the **Traffic Club of Detroit** will be held on August 12, at the Meadowbrook Country Club, 40941 West Eight Mile road, Northville.



HOW TWO RAILROAD SYSTEMS serve United States Steel's new Fairless Works, near Morrisville, Pa. (extreme right), is shown in this artist's drawing. The Reading, with a large new yard between Fairless Junction and Woodbourne (extreme left), and the Pennsylvania, with a yard at Morrisville (upper center), provide ample space for storage, train make-up and fast car movement. The Reading also built 6.7 miles of new track from Fairless Junction to the new steel plant (*Railway Age*, December 3, 1951, page 82). Distance between the new housing development in Fairless Hills (left) and the plant is about 4.5 miles.

EQUIPMENT AND SUPPLIES

FREIGHT CARS

Pennsylvania Plans Long-Term Freight-Car Program

A long-range freight-car program, calling for annual construction of from 1,500 to 2,000 new cars, and for heavy repairs to about 20,000 additional cars each year, is planned by the Pennsylvania.

The contemplated program may have to be reduced in 1952 because of the road's serious loss of revenue—about $17 million for June alone—during the steel strike, and because of material shortages; but it is expected to get into full swing next year. Most or all of the construction and repair work would be done at the PRR's Altoona shops.

Annual cost of the program is estimated at from $36 million to $42 million, with from $9 million to $12 million representing the cost of new cars and the balance the heavy repair work.

The **Great Northern** has begun construction of 1,000 new steel box cars, costing an average of $6,305 each, at its St. Cloud, (Minn.) shops. The assembly line is expected to produce 20 cars a day. Fifty of the cars will be equipped for operation in passenger trains.

The **Western Fruit Express Company** has been authorized by directors of its parent company, the Great Northern, to construct 50 50-ft. steel refrigerator cars at a cost of $18,000 each. All cars will be mechanically refrigerated and heavily insulated for handling frozen foods. They will be equipped with air circulating fans and six-foot sliding doors.

LOCOMOTIVES

The **Eastern Bengal Railway,** East Pakistan, has ordered 40 general service diesel-electric locomotives from the Electro-Motive Division of General Motors Corporation. The locomotives are for service on meter-gage lines, and are of conventional design with A-1-A—A-1-A wheel arrangement for light axle load requirements. When delivered—according to schedule, in July 1953—they will be the first diesel locomotives to operate in East Pakistan. All will be powered with G.M. Model 567 diesel engines. (The Eastern Bengal operates 1,102 miles of 3-ft. 3⅜-in. (meter) gage; 544 miles of 5-ft. 6-in. gage, and 20 miles of 2-ft. 6-in. gage lines of the former Bengal Assam Railway that fell within East Pakistan following the recent partition from India. It should not be confused with the 5,000-mi. North-Western State Railway in West Pakistan, which is more than 1,100 miles distant on the opposite side of India. —*Editor*)

Domestic Equipment Orders Reported in July

Domestic equipment orders for 72 diesel-electric locomotive units and 2,289 freight cars were reported by individual purchaser in *Railway Age* in July. Estimated cost of the locomotive units is $10,720,000, and of the freight cars, $15,134,000. An accompanying table lists the orders in detail.

During the first seven months of 1952 *Railway Age* has reported domestic orders by individual purchaser for 942 diesel-electric locomotive units and 15 steam locomotives costing an estimated $149,052,000; 22,379 freight-train cars costing an estimated $139,915,000; and 147 passenger-train cars costing an estimated $11,318,016.

SUPPLY TRADE

Vapor Heating Forms Two Export Affiliates

Formation of two new export corporations to handle sale and engineering of Vapor Heating Corporation's steam generators for trains and industry has been announced by A. D. Bruce, president.

The new wholly owned subsidiaries are the Vapor Export Corporation, to handle sales to Mexico and Central and South America (but not Canada) and the Vapor International Corporation, to handle sales to Europe, Africa, Asia and other overseas countries. Offices for both corporations are at 80 East Jackson boulevard, Chicago 4.

The new corporations will facilitate developmental work on problems involved in use of Vapor's products on railroads throughout the world.

Coincident with formation of the new export affiliates, O. A. Rosboro, managing director, stated that arrangements are being worked out to have more Vapor products manufactured in other countries. Some products are now being made in England and in Sweden.

The **Spring Packing Corporation** has appointed **Chauncey Krout** to assist the eastern sales manager at Philadelphia, and **Milton Brunner** as chief engineer at Chicago.

The **International Railway Car & Equipment Manufacturing Co.,** of Kenton, Ohio, and Buffalo, N.Y., has changed its official firm name to **International Railway Car Company.**

John W. Stiles, formerly president of the **Island Equipment Corporation,** has announced formation of a new company, to be known as **Stiles Conveyors & Transmissions,** 596 N. W. 54th street, Miami 38, Fla. Covering Florida, with sales branches at Tampa and Jacksonville, the new company will act as factory distributor for many makes of material handling equipment, conveyors, packaging machinery and transmission parts.

R. H. Morse, III, formerly assistant general manager of **Fairbanks, Morse & Co.,** at Chicago, has been appointed general manager of the Beloit (Wis.) Works, to succeed **Orren S. Leslie,** who has been appointed manager of manufacturing, with headquarters at Chicago.

R. H. Morse, III

Mr. Morse, who will now direct all phases of operation at Beloit, began his career with the company at the Beloit plant in 1946. He worked in various capacities, including that of foreman in foundry production control, assistant to the manager of engineering and, for the past several years, assistant general manager.

Orren S. Leslie

Mr. Leslie joined the company as Beloit Works general manager in 1951, after 22 years with another manufacturer of heavy equipment. In his new position he will be responsible for all manufacturing operations in all of the company's various factories, including foreign affiliates.

Domestic Equipment Orders Reported in July

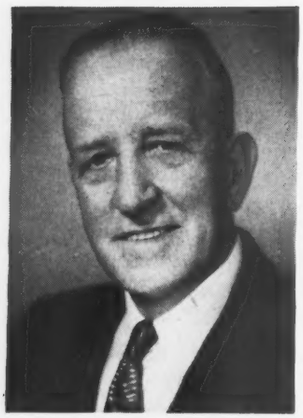
LOCOMOTIVES

Purchaser	No.	Type	Issue Reported	Builder
B&O	13	1,500-hp. Rd.-Sw.	July 28	Electro-Motive
	18	1,500-hp. "A" Rd.-Frt.	July 28	Electro-Motive
	9	1,500-hp. "B" Rd.-Frt.	July 28	Electro-Motive
	6	1,600-hp. "A" Rd.-Frt.	July 28	American-G.E.
	4	1,600-hp. "B" Rd.-Frt.	July 28	American-G.E.
	1	1,600-hp. Rd.-Sw.	July 28	Baldwin-Lima-Hamilton
	3	1,600-hp. "A" Rd.-Frt.	July 28	Baldwin-Lima-Hamilton
	6	1,600-hp. "B" Rd.-Frt.	July 28	Baldwin-Lima-Hamilton
	2	1,600-hp. Rd.-Sw.	July 28	Fairbanks, Morse
International Harvester	4	800-hp. Switching	July 14	Electro-Motive
	2	1,200-hp Switching	July 14	Electro-Motive
P-RSSL	4	1,600-hp. Rd.-Sw.	July 28	Baldwin-Lima-Hamilton

FREIGHT CARS

ACL	12	50-ton Air Dump	July 21	Baldwin-Lima-Hamilton
Bangor & Aroostook	250	Insulated Refrig.	July 14	Pacific Car & Fdy.
	250	Insulated Box	July 14	Pacific Car & Fdy.
C&O	400	70-ton Gondola	July 21	Amer. Car & Fdy.
	300	50-ton Gondola	July 21	Amer. Car & Fdy.
Kennecott Copper Corp.	55	90-ton Alloy Steel Air Dump	July 21	Baldwin-Lima-Hamilton
Soo Line	400*	50-ton Box	July 7	R. R. Shops
Transportation Corps	204	80-ton Flat	July 7	Pressed Steel Car
	386	40-ton Tank	July 7	Amer. Car & Fdy.
	32	50-ton Flat	July 28	Greenville Steel Car

* 200 for Wisconsin Central



Bryant H. Burns, who has been appointed to the transportation seating division sales staff of the Heywood-Wakefield Company, with headquarters at New York, succeeding the late Guy M. Ralph. Mr. Burns formerly was chief expeditor for the transportation seating division, at Gardner, Mass.

W. J. Stebler has been elected executive vice-president of the **General American Transportation Corporation,** Chicago.

F. Eugene Englander has been appointed sales manager of the Richmond division of **Gar Wood Industries, Inc.,** Richmond, Cal. He formerly was sales manager for Oscar Krenz, Inc., Berkeley, Cal.

A new stock-carrying branch warehouse and sales office has been established by the **Quaker Rubber Corporation,** division of the **H. K. Porter Company,** at 2201 N. Washington avenue, Minneapolis. Under overall supervision of **T. H. Olson,** Midwest district manager, the warehouse will be managed by **Alex Rogan.**

J. A. Handley has been elected president and also a director of the **Whiting Corporation,** Harvey, Ill. Mr. Handley was vice-president and chief executive officer for the past year, and before that was manager of the company's branch plant in California.

OBITUARY

C. N. Thulin, at one time vice-president of the Duff-Norton Manufacturing Company, and more recently representing the Joyce-Cridland Company, died at Marshalltown, Iowa, on July 21.

Guy M. Ralph, formerly a member of the transportation seating division sales staff of the Heywood-Wakefield Company at New York, died recently, after a long illness.

Thomas Cruthers, vice-president of the Worthington Corporation since 1936, died on July 27, at his West Orange, N. J., home.

CONSTRUCTION

Chesapeake & Ohio. — Contracts have been awarded, at the indicated probable costs, to:

The S. N. Nielsen Company, Chicago, for a diesel shop building and related facilities at Clifton Forge, Va., as part of an authorized project reported in *Railway Age* May 12, page 80 ($409,000) and for a dormitory and service building at Chicago, as part of another authorized project (see below) ($145,000); Gustav Hirsch Organization, Columbus, Ohio, for replacing electrical wiring in office building at Huntington, W. Va. ($73,914), for power and lighting feeders for machine shop at Russell, Ky. ($22,170), and power line for fueling and sanding facilities at Columbus ($11,677); Thomas Company, Huntington, for construction of yard office, and toilet-wash-locker building at Cheviot, Ohio ($67,300); Armco Drainage & Metal Products, Inc., Richmond, Va., for furnishing and placing 144-in. and 76-in. tunnel liner through two culverts at Millboro, Va., as part of an authorized project (see below) ($62,000); Haley, Chisholm & Morris, Inc., Charlottesville, Va., for excavation and concrete for, and hauling, tunnel liner at Millboro ($38,000); LaVern Rice, Hartford, Mich., for grading for Hooker Electro-chemical Company tracks at Montague, Mich. ($33,000); Middle States Bituminous Corporation, Ashland, Ky., for improving roadway into car shop area at Russell ($29,000); and Lambert Construction Company, Huntington, for signal towers at Newport, Ky. ($26,000), and Cabin Creek Junction, W. Va. ($24,000).

The following projects have been authorized, at indicated probable costs:

Dormitory and service building at Chicago ($200,000); installation of tunnel liners in two culverts at Millboro, Va. ($122,800); construction of 6,225 feet of track to serve the Buick Motor Sapphire Jet Engine plant at McGrew, Mich. ($113,628); construction of 8,500 feet of track to reach a jet engine plant at Romulus, Mich. ($100,000); 1,000,000-gal. fuel oil tank and servicing facilities at Russell ($97,500), at Walbridge, Ohio ($55,000) and at Peru, Ind. ($60,000); construction of 5,216 feet of track to serve the Lincoln Mercury plant at Wayne, Mich. ($60,135); construction of tracks for the Carbon Fuel Company at Marmet, W. Va. ($59,795), and for the Kroger Grocery Company at South Malden, W. Va., ($59,000); repairs to a 20-ft. arch culvert at Leach, Ky. ($52,900); provision of printer operation of telegraph circuit between Richmond, Va., and New York ($42,000); team track facilities at Richmond, Ind. ($37,700); relocation of bridge and line change at Quinnimont, W. Va. ($36,000); replacement of four-story elevator in Main Street station at Richmond, Va. ($29,660); extension of tracks for sand quarry at Richmond, Va. ($23,650); construction of 3,500 feet of track to serve the Wallace Stone Company at Quarry, Mich. ($23,392); and air-conditioning of operating suite of C&O Hospital at Huntington ($22,500).

FINANCIAL

Panel Cites MP Earnings As Reason To Review Plan

Increased earning power, and the likelihood of continuing it for several years, is one big reason for taking another look at the Missouri Pacific reorganization plan now pending in the courts.

This view was expressed in a July 24 report handed down by a panel of Interstate Commerce Commission financial experts. Appointed to study developments which have occurred since the previous plan was approved in 1949, the panel concluded that sufficient changes have taken place to warrant calling the plan back to the I.C.C. for review.

As noted briefly in *Railway Age* of July 28, page 53, the three-man panel took an optimistic view of future MP earning power. It cited increases in freight rates since 1949, continued dieselization, and substantial industrial expansion in the Southwest as factors contributing to higher earnings. It dismissed contentions that improved earnings are the result of "abnormal" factors.

The record justifies the conclusion that during the period in which the building up of the national defense continues, the accompanying expenditures and the efforts of the administration may sustain the present economy toward maintaining a stable economy at its present or at a higher level "for some years," the board said.

The panel made no recommendations for changes in the plan itself. Its findings as to "changed conditions" also are still subject to I.C.C. approval.

CAR SURPLUSES, SHORTAGES

Average daily freight car surpluses and shortages for the week ended July 26, were announced by the Association of American Railroads on July 31 as follows:

	Surplus	Shortage
Plain Box	7,442	982
Auto Box	1,418	0
Total Box	8,860	982
Gondola	9,097	278
Hopper	14,200	219
Covered Hopper ..	32	0
Stock	1,776	88
Flat	68	53
Refrigerator	4,285	0
Other	690	0
Total	39,008	1,620

Security Price Averages

	July 29	Prev. Week	Last Year
Average price of 20 representative railway stocks	63.94	63.07	53.22
Average price of 20 representative railway bonds	93.10	93.75	92.17

Dividends Declared

ATLANTA & WEST POINT.—$2, payable August 1 to holders of record July 22.

GREAT NORTHERN.—non-cumulative preferred, $1, quarterly, payable September 20 to holders of record August 20.

NASHVILLE, CHATTANOOGA & ST. LOUIS.—75¢, quarterly, payable September 2 to holders of record August 8.

WESTERN OF ALABAMA. — $3.50, payable August 1 to holders of record July 22.

New Securities

Application has been filed with the I.C.C. by:

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—To assume liability for $3,990,000 of series QQ equipment trust certificates, to finance in part 15 diesel-electric locomotive units and 10 passenger-train cars. Estimated cost of this equipment, listed below, is $5,341,000.

	Description and Builder	Estimated Cost
4	1,000-hp. switching locomotive each consisting of two lead units and one booster unit (Electro-Motive Division, General Motors Corporation)	$537,427
3	1,500-hp. switching locomotives (Electro-Motive)	180,233

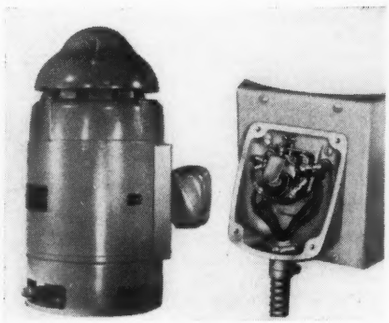
(Continued on page 93)

The Copyflex Model 14, a desk-side copying machine, has just been announced by the Charles Bruning Company, Teterboro, N. J. This machine can copy documents up to 20 in. wide. The Model 14 takes up less than a square yard of floor space and can be rolled on its casters to any work-site. It operates on 115 volt, 60 cycle, a.c. power.

Fork Truck with Dynamic Brake

A new SpaceMaster electric fork truck line has been announced by Lewis-Shepard Products, Watertown, Mass. Among the engineering and operational features incorporated in the new design is the master controller. Speed, direction and braking are accomplished with one control lever. The operator has a choice of four speeds forward or reverse, and because of the incorporation of magnetic controls in this unit, he can throw the master control lever into full speed forward and get a smooth, automatically timed acceleration through each intermediate speed. It is not necessary to stop the lever at each speed stop. However, any one of the speeds can be selected if desired and the truck can be run for as long as necessary in any speed. Furthermore, the operator can go from full (or any) speed forward to full (or any) speed in reverse with one flick of the lever. Deceleration forward through neutral and into acceleration reverse are all controlled by magnetic timing.

The new truck is supplied with dynamic braking. The operator can stop the truck without the use of the mechanical brake. Dynamic braking is accomplished via the master control lever. This feature adds to the operator's control over the truck and reduces the need for foot-brake operation.



Single Phase Vertical Hollowshaft Motors

A series of single-phase hollowshaft motors, types SCU-C and SCU-R, has recently been added to the line of U.S. vertical motors marketed by U. S. Electrical Motors Inc., Los Angeles 54. An improved and simpler method of disconnecting the starting capacitors has been introduced in this line of motors —namely, the accelerating type relay.

The relay now used gives a fast, clean contact break. The large double break contacts insure long and trouble-free life. To avoid any possibility of bearing grease working into the relay, or foreign particles being blown into the contact points by the ventilating system, the relay was designed into the easily inspected, split-type outlet box on the side of the motor.

Available from 1½ to 5 hp., with speeds of 1,800 or 3,600 r.p.m., the SCU-C and SCU-R motors offer such features as asbestos protection of windings, Lubriflush lubrication, normalized castings, solid centricast rotor, downdraft ventilation, adjustable hollowshaft, reverse protection clutch, conservatively rated capacitors and weatherproof housing.

Attachment for Moving Semitrailers

A simple attachment for fork-lift trucks which can be used for moving and spotting semi-trailers has been developed by the Industrial Truck Division of the Clark Equipment Company, Battle Creek 24, Mich.

The device slips over the forks of a 6,000- to 10,000-lb. capacity fork-lift truck, where it is securely held in place by a chain. A cross member, with a 3-in. hole in the center, serves as the engaging plate.

In operation, the fork-lift is driven up to the end of the trailer so the engaging plate is directly underneath the pin. As the fork and its attachment lift, the plate engages the pin and the trailer is lifted. It may then be either pushed or pulled to any location.

The illustrations show the attachment on a Clark Yardlift 60, a 6,000-lb. capacity, pneumatic-tired fork-lift truck.

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Each car is reconstructed with an inside height of 2 feet 6 inches to reduce the possibility of overloading breakdowns. Whether used for railroad interchange, industrial service or mill type service, these cars will prove efficient and economical to operate.

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- New welded steel floors up to ½" in thickness as specified by customer
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- New side and end top chord angles
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- Fish belly type side sills 24" deep at center of car
- AB, KC type or straight train line air brakes as specified.

Each car is put into first class operating condition by skilled workmen in Chicago Freight Car's own shops. Built in 1926, these gondola cars will give many years of rugged service. They are priced to give you exceptional values and are ready for prompt delivery.

GENERAL SPECIFICATIONS

Capacity, nominal	100,000 lbs.
Light weight, approx.	48,000 lbs.
Load limit	121,000 lbs.
Inside length	38 ft. 4 in.
Inside width	9 ft. 0 in.
Inside Height	2 ft. 6 in.
Length over strikers	40 ft. 6 in.

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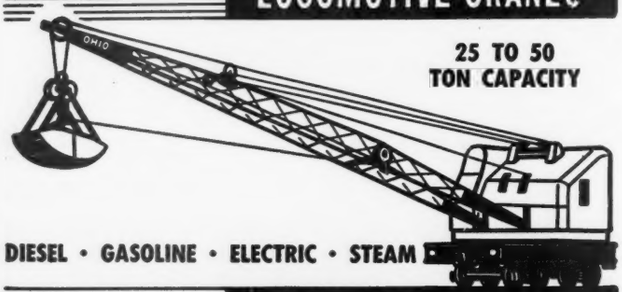

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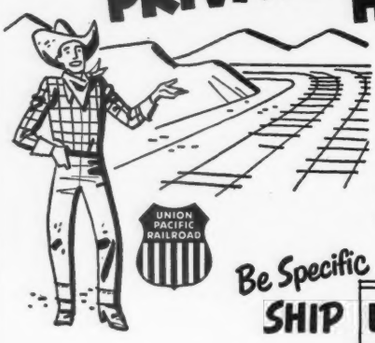

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Benchmarks and Yardsticks

ONE OF THE MOST IMPORTANT measuring sticks for a man in a supervisory job is his *ability to listen.* There is a lot of gobbledegook being printed in learned periodicals about the "failure of communication." What this means is that hardly anybody understands what anybody else is trying to say; or, maybe, doesn't think it's worth listening to anyhow.

People are so made, though, that if a fellow shows he isn't interested in what I'm trying to tell him, then I'm probably not going to listen very hard to what he's trying to tell me. Whose duty is it to break this vicious circle? Obviously the beginning belongs, primarily, to the fellow who has ambitions to be a leader—to the supervisory officer, that is. If he hopes to be able to tell people what to do, and persuade them to act in accordance with his wishes, then he has to begin by listening attentively *with* (and not just *to*) the people to whom he has some ideas he wants to communicate.

A radio or TV set doesn't receive unless it's tuned in. People don't receive, either, unless they're tuned in; and the way to tune them in is, first, to listen to them—not just to their words, but also to try to understand what they're saying from their point of view.

Some practical pointers on how to tune other people in so they can receive what you want to tell them are offered by a couple of writers—C. R. Rogers and F. J. Roethlisberger — in the July-August issue of the Harvard Business Review. One of these writers suggests, when a group of people get into heated discussion, that someone propose adopting the following rule: *Before anybody is allowed to express his own views, he must first express the ideas and feelings of the previous speaker —accurately and to the previous speaker's satisfaction.*

This writer testifies that this device sounds simple, but that it takes a lot of will power actually to state the other fellow's views in language he'll accept. But, when it is done, it goes a long way toward getting everybody in the group to appreciate the other's views—hence it removes the "heat" and promotes understanding and rational agreement.

The other writer tells about two supervisors. One, called "Smith," tells a subordinate just how he wants a job done, without getting any of the subordinate's own ideas; and he leaves the subordinate decidedly unconvinced. The other supervisor, named "Jones," first gets the subordinate's ideas of the best way of doing the job. If it isn't the right way, Jones at least gives the subordinate the feeling that his suggestion is under consideration and, consequently, the subordinate is usually more willing to give his boss' idea a fair trial than Smith's subordinate is.

Which supervisor, Smith or Jones, is more likely to succeed in getting efficient work from the team under his supervision?

J. G. L.

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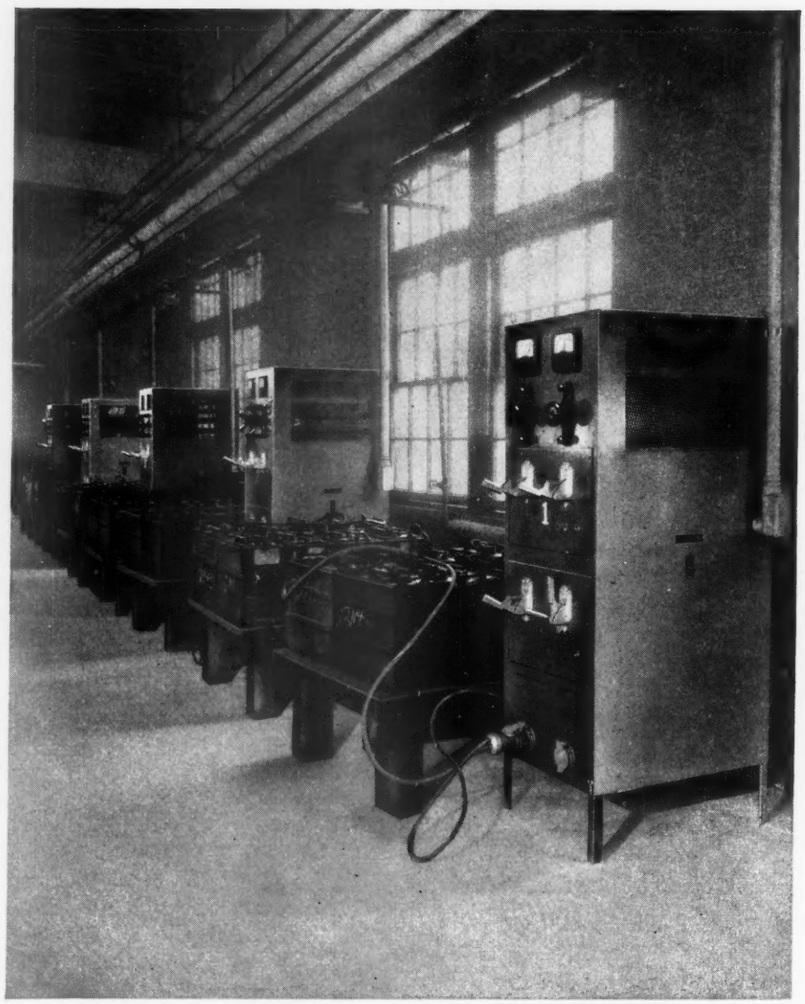

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WHY DOES GOVERNMENT FAVOR PRIVATE CARRIERS OVER COMMON CARRIERS?

Government in a democratic country ought to be interested in supporting, nourishing and preserving common carriers of all sorts. The users of transportation that can provide their own facilities to produce it are relatively few in proportion to the number who must depend upon the services the community expects the common carrier to perform. The many citizens who are not wealthy are more dependent on common carriers for the movement of their own persons than are those few whose means are comparatively unlimited. Furthermore, common carriers are the floor supporting the entire transport structure: the service to which all—big and little—turn when private or contract services are unwilling, untractable or inadequate.

Government action in recent years, in respect to transportation, has not been that of a guardian of the interests of the majority. It has concerned itself more with building up "special interest" transportation at the expense of common carriers—advancing the favored few to the disadvantage of the general welfare.

Take the federal transportation tax—first levied during World War II on the ground that it would discourage public use of then overloaded transportation facilities when private transport was at a standstill. It is still with us. And who suffers most from its capricious and undemocratic application? Not the owner of private means of transportation, but the little guys who have to use public common carrier transportation, the citizens whose interest ought to be the first concern of government.

The large oil companies, for example, as soon as possible after the war ended, went through elaborate legalistic reshuffling of tanker owning and leasing arrangements, as a result of which they escaped paying the three per cent tax levied on their smaller competitors using common carriers. The tax was a big factor among those that influenced some of the largest food processors and chain stores to invest in private truck fleets with which to reach into the fields and orchards for the majority of their produce. It doubtless encouraged bigger private barge fleets where large corporations are in a position to utilize, without resort to common carriers, the facilities provided by Uncle Sam in his role as a ditch digger and deepener.

Similarly, the 15 per cent passenger transport tax is an important element in the travel expenditure of the man who uses trains, buses or planes operated by common carriers, but the man who runs his own car or plane does not pay it. It not only penalizes the man who cannot afford to provide his own facilities for personal transportation; but it discourages the use of public facilities; makes them progressively more expensive; and encourages the further use of private transport on crowded highways—a tremendous and constantly growing expense to this same government.

In Whose Interest?

Take also the federal government as a user of transportation. Its departments are among the most exacting and bargain-minded of all customers of the common carriers. They won't pay the going rates, for the most part, but demand and exact Section 22 quotations and special deal contracts at increasing differentials below what the rest of the common carriers' customers pay. They find fault with even these depressed rates, long after the service is performed, and sue the common

carriers for millions in so-called reparations. They demand all kinds of special services and forms of protection. They expect common carriers to be in instant readiness to move whatever load is offered—not concerning themselves with the necessary *means*.

Yet, with all this, the common carriers have constantly to be on guard against further discrimination by government as a user of transportation which will weaken their ability to meet the demands of these same departments in the future. It has been a constant struggle to convince the armed services that they cannot build up large fleets of private vehicles for routine domestic movements of troops and materials, and still expect common carriers to be ready to meet big emergencies.

As recently as this spring the railroads had to make formal complaint about flagrant encouragement of non-scheduled, contract aircraft operators in the movement of military personnel. Here is what the armed forces were doing. They were diverting more and more of the desirable movements of troops—i.e. "plane-size" parties, for long hauls, with common origins and destinations, and little or no accompanying "impedimenta"—to "non-sked" air operators banded together into two contracting groups. Government left to the common carriers, meanwhile, the less remunerative individual or small party traffic, and the movements requiring gathering or distribution of personnel. And it left to the railroads, of course, such nasty jobs as those where passenger and freight equipment had to be deadheaded in large numbers to scattered locations—as in maneuvers.

Peculiar Use of Public Property

But that's not all. A large portion of the planes used by these "non-skeds" to carry this military party travel were owned by the Air Force and leased to the operators at ridiculous rentals. The "non-skeds" were getting a C-46 plane for $300 a month and a big C-54 for $550. How cheap these rentals were is shown, according to American Aviation Daily, by the fact that some Air Force lessees, paying $300 a month for C-46's, were, in turn, subleasing them to other operators for as much as $8,000 and $9,000 a month. And further to insure the profitability of a service at depressed rates, the "non-skeds" were invited to use taxpayer-built and maintained *military* air fields without charge, and to obtain gas and oil at these fields at the prices paid by military agencies.

Some correction of the more glaring discriminations in the government use of the "non-skeds" has been made since the railroads registered their complaint. The lease fee on C-46's has been raised from $300 to $1,875 a month, and, on C-46's, from $550 to $4,821 a month. The Air Force denies that undue bargains in gas or oil or use of fields are now proferred. The short-sighted treatment of common carriers as a *stand-by* facility, continues, nevertheless.

The common carriers, and those who use them, can neglect no opportunity to educate government in the necessity for a virile common carrier transportation system. That system cannot be virile, and adequate to the needs of the nation, so long as government fosters types of transportation benefitting the few and lets languish those forms on which most citizens must depend.

THE COMPETITION IS CUTTING CLOSER

Railroaders have long considered grain to be not susceptible to long-haul truck competition—because it is a low-rated commodity. But the trucking of grain has grown to such proportions that some observers in the Southwest believe that trucks may be moving between 30 and 40 per cent of this year's crops in that territory to primary market and export terminals.

As might be expected, contract truckers, operating under agricultural exemptions, are handling the bulk of this movement. Some of these operators are primarily engaged in the movement of fresh fruit and perishables, and are simply using grain for return trip revenues. Others, rather amazingly, are reported to be primarily in the grain business and seeking fertilizer and other available traffic for revenue on the return trip.

Because these contract truckers file neither rates nor traffic statistics it is almost impossible to gather accurate information concerning the real volume of market grain moved by truck. But railroad men in the wheat belt are well aware of the rapid growth of long-haul truck competition in the past few years. The "in transit" privileges accorded grain moved by rail have been a strong factor in limiting the inroads of truck competition. But many railroad men report that the movement of grain to processing plants where the end-product will be consumed locally, and to ship-side export terminals, is largely by truck.

This truck movement has grown, and may well continue to grow, simply because the country grain elevator operators stand to gain by it. Grain prices at primary market and export terminals are determined on the basis of railroad rates, and any advantages gained as a result of trucking go directly into the country elevator operator's pocket.

However, the trucking of grain isn't exactly a "bed of roses" for the truckers. Their low rates—which seem to run around 15 to 25 cents per hundredweight under railroad rates—keep it from being a lucrative business. More rigid enforcement of federal pure food laws concerning the condition of vehicles used to transport edible grains promises to be something of a headache.

The wonder of this trucking business is that, although a good many independent grain contract truckers seem to go broke each year, or to pull out before they "lose their shirts," there seem to be plenty others ready and willing to fill their shoes. In any event, they have been cutting deeply into this heretofore invulnerable railroad traffic.

A real problem confronting the railroads is finding some method of attracting "intermediate volume" shipments—shipments large enough to be classified as truckload when moved by highway, but which are considered as l.c.l. on the railroads.

Making L.C.L. Pay Its Way

A proposal for compensatory rates and charges on l.c.l. shipments

Written especially for *Railway Age* by
A. M. RIBE
Traffic Consultant

THE PROPOSAL

This proposal has been placed before the railroads' territorial rate associations, and is currently being studied, by them. Briefly, and in non-tariff language, Mr. Ribe's plan is:

1. Abolish existing minimum charges for l.c.l. shipments, and abolish all minimum rate provisions in connection with pick-up and delivery services.

2. Establish a "service" or "bill of lading" charge on all shipments bearing freight charges less than $28.60. This charge may be assessed either by increasing the charges to $28.60, or by making a charge of $2 per shipment, whichever is lower.

3. Create a rule calling for a minimum weight per shipment of 100 lb. or the number of pieces in the shipment multiplied by 10 lb., whichever is greater.

4. Establish a tariff rule creating a "standard" l.c.l. shipment, defined as one which is:

(a) Tendered unrouted, for movement on a "standard" harmonized bill of lading,

(b) Fully prepaid by the consignor,

(c) Each piece or package either weighs 25 lb. or more, exceeds one cu. ft. in measurement, or is declared by the shipper as weighing 25 lb., and

(d) Marked as required in the consolidated freight classification—in addition to having each piece or package clearly marked with the bill of lading number.

5. Write a tariff rule providing discount allowances to the consignor when shipments are tendered as "standard":

(a) A 5 per cent discount for straight "standard" shipments.

(b) A 10 per cent discount if the "standard" shipment weighs 6,000 lb. or more.

(c) An additional 5 per cent (making a total of 15 per cent) if the "standard" shipment is palletized, or otherwise assembled into units easily handled by fork lift trucks.

6. Write a rule providing for the handling of two or three "intermediate volume"* shipments in a single car from one point of origin to one, two or three destinations —or from one, two or three points of origin to a single destination—providing the intermediate points are authorized stopping-in-transit points.

7. Rates for multiple-loaded, intermediate volume shipments should be the carload rate applicable in connection with the lowest minimum weight from origin to final destination. The minimum weight for each such shipment would be 50 per cent of the lowest minimum carload rate applicable for the same commodity, an additional "bill of lading" charge of $28.60 to be made for each intermediate volume shipment.

*Intermediate volume shipments can be defined as those which, when moving by truck, are classified as truckload, but when moving by rail are considered l.c.l. This covers shipments ranging from about 8,000 lb. to 20,000 lb.

The author is senior partner of A. M. Ribe Associates, industrial traffic managers and consultants, of Birmingham, Ala., and a member of the National Industrial Traffic League's rate construction and tariffs committee.

8. The multiple-loading services and rates would not apply in connection with:

(a) Freight which will contaminate or damage other freight in the same car;

(b) Freight loaded or unloaded at an intermediate prepay or non-agency station;

(c) Bulk freight;

(d) Freight consigned so as to require surrender of the bill of lading or any other document in advance of delivery;

(e) Freight moving without recourse on the consignor, or under instructions against its delivery without collection of freight or other lawful charges; or

(f) Freight stopped in transit to complete loading, or for partial unloading.

PART I

The proposals set forth here have been designed by my organization to provide a logical and consistent basis for assessing rates and charges of all types of l.c.l. shipments, from the smallest to the largest, which would provide incentives for more economical operation. It is intended to work toward reducing transportation costs for the l.c.l. shipper, and improving income for the railroads.

A revision in the present system of assessing charges is the sole goal of this proposal. While many improvements and economies can undoubtedly be made in handling l.c.l shipments, we have not tried to deal with that phase of the problem here. Such changes obviously take considerable time to become standard throughout industry. Therefore, it was felt that the first and logical step in solving the "l.c.l problem" is to get the charges for present methods of handling on a basis that is sound and fair for both shippers and carriers. As changes in handling methods are made, appropriate adjustments in the suggested pricing structure can—and should—be devised.

The Goals

Before undertaking to draft this proposal, certain goals were set to be achieved:

- Maintenance of a complete door-to-door transportation service.
- Maintenance of existing classification and distance principles in connection with all l.c.l. shipments.
- A system which could be operated from one class rate scale for all shipments, regardless of size.
- A system requiring only two ratings on any given article, one for l.c.l. movement, and one for carload movement.
- A system which would be simple and inexpensive to publish, and relatively easy of application.
- A system which could be published independently of the classification and exception ratings and of the class rate scales and which could, therefore, apply in connection with any classification and any class rate scale which might be in effect.

In considering this plan, the important thing to note is that if the objectives had been different, the suggested solution would likewise have been different. At the very outset it was also determined that any suggested system of rates and charges should be specifically designed to encourage more efficient, less expensive operating practices, thereby helping to hold down the carriers' requirements for further general rate increases.

The problem of the small shipment has received more attention than any other phase of the l.c.l. problem. It has also been the subject of two detailed investigations by the Interstate Commerce Commission.*

While many improvements and economies might be made in the physical handling of l.c.l., this proposal does not attempt to deal with that phase of the problem.

The real problem, however, seems to be not so much one of small sized shipments as one of (1) small revenue shipments, and (2) small packages.

The problem with respect to small revenue shipments is that the revenue received frequently is insufficient to permit absorption of the constant costs incurred on every shipment handled, regardless of its size, distance hauled, or classification rating. To cover these constant expenses, this proposal abolishes all minimum charge rules and substitutes a "service" or "bill of lading" charge. Frankly, we do not know just what this charge should be, but it should be adequate to meet these constant costs. Studies on the subject indicate that these costs are between $1 and $2. We have suggested $2. the apparent maximum.

Such service charges should, of course, disappear when the revenue from a shipment becomes sufficient for these costs to be absorbed. We have arbitrarily suggested $28.60 as the point where this might occur simply because it is the carload minimum charge applicable east of the Mississippi (prior to the rate changes authorized in Ex Parte 175). Perhaps it should be much lower.

The small package is another problem. At present, there are no tariff provisions covering this condition, though numerous suggestions have been advanced. All of them are based on penalty charges ranging from 10 to 15 cents per package weighing less than 35 lbs. Not only would such a penalty charge be unfair—the same charge would apply for a 1-lb. or 30-lb. package—but it would be difficult to police, and quite probably might generate ill will among shippers.

We have suggested establishment of a classification rule setting a minimum weight per shipment of 100 lb., or the number of packages in the shipment multiplied by ten lb. (The 10-lb. figure is arbitrary. It could just as easily be 5 or 15 lb.) Such a rule would be easy to enforce since every bill of lading must show the total number of packages and the total weight. Moreover, it would apply only to the actual deficit in weight, and each shipment would be averaged out—giving the shipper credit for heavier packages in the shipment.

*The I.C.C. has defined a "small shipment" as one weighing 300 lb. or less.

Undoubtedly the great preponderance of small shipments handled in pick-up and delivery services is one of the major factors which has forced p. & d. rates to their present high level.

Railroad l.c.l. freight service is neither a mail nor a parcel service. Therefore, it is reasonable for the carriers to provide an average minimum weight limit of, say, 10 lb. Lighter units would be accepted, but charges would be assessed on the basis of 10 lb. per unit.

One desirable effect of such an arrangement would be the drawing of a line between railroad freight service on one hand and parcel post and express services on the other, without the necessity of the railroads formally retiring from the small parcel business.

There are very good reasons why the constant costs of railroad l.c.l. service should exceed those of parcel post and express. The entire organization and handling system of the post office and the express companies are specifically adapted to handling small shipments and small packages. Railroad l.c.l. service, on the other hand, is designed and equipped to handle larger shipments and larger package units.

Use of the proposed "service" charge will actually result in a sliding scale of minimum charges as recommended by the I.C.C. examiner in the "small shipments" case, but will be simpler to publish and apply. The combination of the "service" charge and the regular freight charge automatically results in a sliding scale which varies with both distance and class. For example: under our proposal the minimum charge under the new uniform class rate scale (excluding the Ex Parte 175 surcharge) on a shipment weighing 100 lb. or less would be:

Miles	Class 100	Class 85	Class 70	Class 50
50	291	277	264	246
100	314	297	280	257
300	379	352	325	290
500	431	396	362	316

Similarly, on a 300-lb. shipment the charges would be:

Miles	Class 100	Class 85	Class 70	Class 50
50	473	431	392	338
100	542	491	440	371
300	737	656	575	470
500	893	788	686	548

Furthermore, this arrangement preserves classification and distance principles to the fullest. The differential in cents per 100 lb. between a first class shipment and a fourth class shipment, for any distance, is the same, regardless of the size of the shipment. Also, the difference in cents per 100 lb. between a shipment moving 50 miles and one moving 100 miles is the same on all shipments—small or large.

Advantages to Shipper

To some extent, shippers will be able to avoid the impact of the proposed increased charges by using other parcel services. In other instances, they will be able to consolidate their smaller shipments and packages into a lesser number of larger shipments and packages.

The time consumed in checking and verifying charges on small shipments should be greatly reduced. The suggested rules are simple. A person can automatically apply them to any shipment without having to refer to the tariff in each instance to find out whether the minimum is a flat amount, the first class rate, or otherwise.

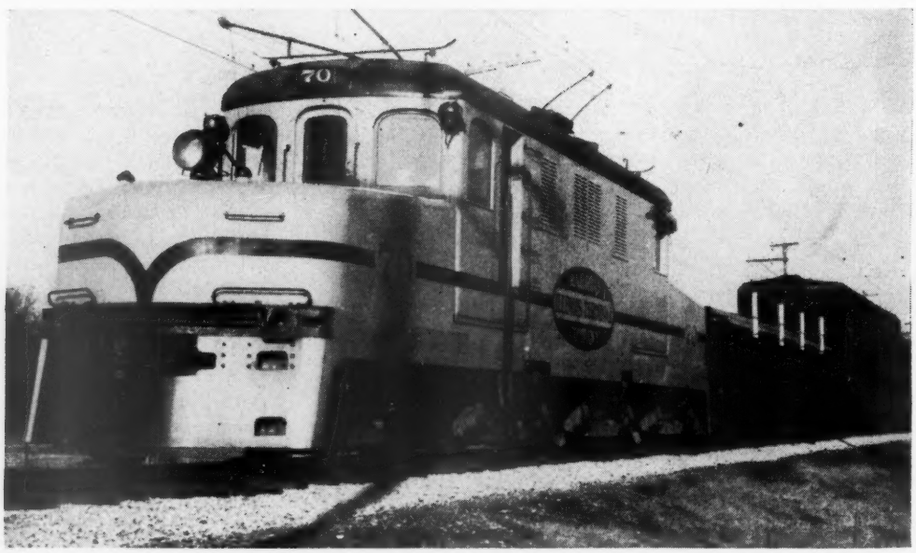
Certainly, everyone would be better off if the shippers and carriers could work out a voluntary solution to this l.c.l. problem, rather than waiting for the commission to prescribe some arbitrary course of action. We feel sure the I.C.C. would welcome a voluntary solution to this problem.

It is generally realized that if the commission prescribes a cure for the small shipments problem, it will have to be in the nature of a minimum rate order. Such an order, once issued, sets up a pretty inflexible situation, since it cannot be amended or exceptions made without formal modification of the order. That requires the time for a hearing and decision by the commission.

If the matter is settled by voluntary agreement between the carriers and shippers, the door is always open either to amendment or exception. If certain features of the basic idea prove to be unworkable they can always be amended on thirty days' notice. If some particular exceptions are justified, they can be established by negotiation either with individual roads or groups of carriers.

[The second part of Mr. Ribe's article will appear in a subsequent Freight Traffic Issue of *Railway Age*.—Editor]

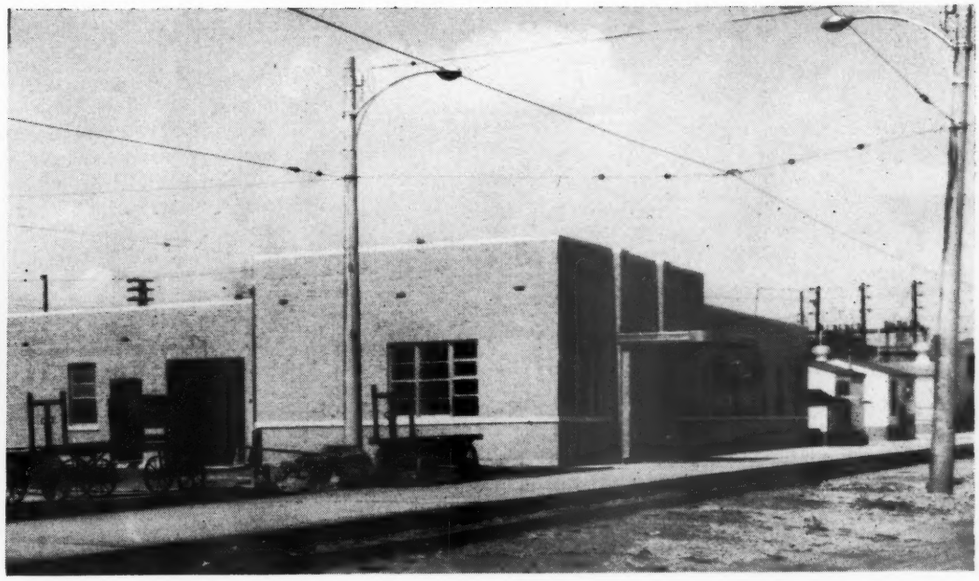
DIESEL . . .



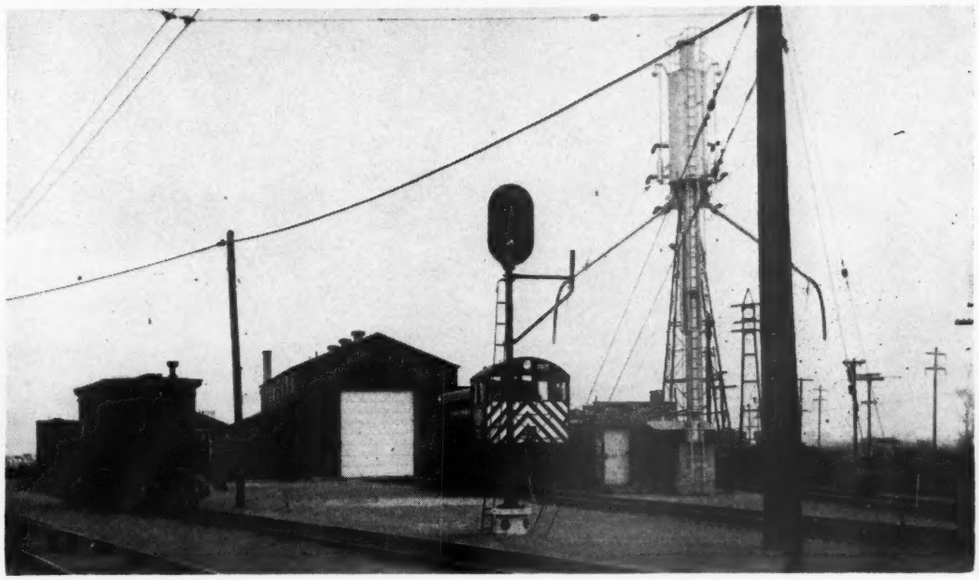
. . . AND ELECTRIC LOCOMOTIVES

back a long-standing credo: "Give the shipper what he wants!"

THE ILLINOIS TERMINAL



A "self-earned" improvement program has brought many physical changes such as this new passenger terminal at East Peoria . . .



. . . and this small diesel terminal at McKinley Junction where running repairs to part of the diesel fleet are handled.

Among the youngest in America's family of Class I railroads is the Illinois Terminal which, technically at least, is less than seven years old. While some of the railroads that comprise this 440-mile line date back as far as 1868, it was not until 1928 that the bulk of these roads were absorbed into a single system. Three more important segments—all in the greater St. Louis area—did not come into the fold until 1930. And the present operating company did not take over the properties until December 31, 1945.

Physically, the IT's ancestors were of varied origin, for among them were steam-powered terminal and switching roads, a local street car line, an extensive interurban "empire," a segment of the former Chicago, Peoria & St. Louis and an electric suburban line. Today the Illinois Terminal still retains many of the characteristics of these ancestors and carries on effectively most of the heterogeneous mixture of services they offered. But the past seven years have witnessed the advent of a new "unity"—both of personnel and of physical plant—that is permitting further refinement in the "custom" character of IT services.

From the office of President Herbert W. Ward (high in the modern Central Terminal Building in downtown St. Louis) to yard offices scattered over the system, *Railway Age* has found that everyone on the Illinois Terminal is governed by the unwritten credo: "Give the shipper what he wants!" On a smaller road such as the IT this is possible, too, because all of its traffic and operating staff, from Mr. Ward right down to the yard clerks, are in unusually close personal contact with shippers—particularly those located in the heavily industrialized greater St. Louis area.

This credo might be termed Item Number One in the Illinois Terminal success formula. It has been given added emphasis since Mr. Ward came to the IT as its president in May 1948, but it was a part of the old Illinois Terminal of 35 years ago—back in the days when that name belonged only to the 14.7-mile steam-powered switching road between East St. Louis and Alton.

A reporter learns this not from anyone in the railroad's organization, but from the chief traffic officer of an industry served by the IT—a man who has been

with that one industry for 33 years but who began his traffic career as an employee of the predecessor road.

Although Mr. Ward came to the Illinois Terminal as its president, his railroad career dates back to 1908 when he joined the Minneapolis & St. Louis as a clerk in the tariff department. He is particularly proud of his 13 years in train service as a brakeman, and later conductor, on the Chicago, St. Paul, Minneapolis & Omaha which preceded his return to traffic work on that road and later on the M&SL. Mr. Ward is also an attorney admitted to practice before the State courts in Minnesota, the U. S. District Court and the I.C.C.

This unusual combination of operating, legal and traffic experience helped gain him the position of vice-president on the latter road during the early years of its rehabilitation under Lucian C. Sprague. And it has enabled him to steer the Illinois Terminal successfully through its first few years as a railroad system totally divorced from electric power interests which had rather "stepmothered" it for so many years.

Although the Illinois Terminal was well cared for during this era of power company ownership (which stemmed from absorption of the electrified Illinois Traction lines) employees of the road never quite got over the feeling that, as a railroad organization, the Illinois Terminal was just a sideline of the utility business and would never stand on its own.

The "Interurban" Part of the IT

In point of mileage, the largest single component of the present Illinois Terminal system is the electrified Illinois Traction division which includes the main lines from St. Louis to East Peoria, Ill. (171 miles), Springfield to Urbana-Champaign and Delong (106 miles) and Decatur to Mackinaw Junction (66 miles).

Built between 1902 and 1910 as an electric interurban system by William B. McKinley, these lines have survived almost from the start to accommodate standard steam railroad freight cars in interchange service. While at a few points this division is still hampered by city street operations, it never did "ring the courthouse square"—a feature of much early interurban line construction which proved to be a hangman's noose—freight-wise—when private autos began nibbling away the trolley passenger business in the late twenties.

Now things are different. The road not only stands on its own feet but it has increased its "muscular power" through a long-range improvement program that has been self-earned. It's that "self-earned" feature of the program that has so boosted the *esprit de corps* all over the railroad. Under Mr. Ward's leadership, there is a feeling that "now we are going places."

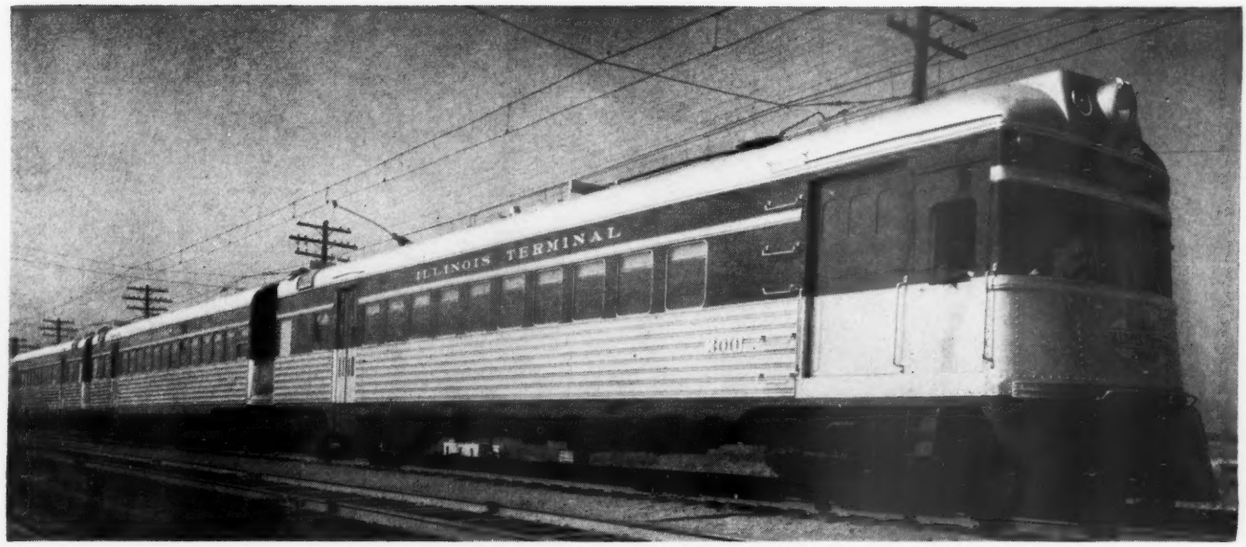
Tangible Evidence

In addition to improvements to roadway, buildings and structures, the "self-earned" improvement program has entailed the purchase of:

- 1,175 new freight cars ($4,272,847)
- 19 new diesel-electric road-switching and switching locomotives—which replaced steam locomotives formerly used on non-electrified lines—($1,891,626)
- 6 electric freight locomotives built in the company shops ($355,240)
- 3 streamlined passenger trains for main-line service ($913,721)
- 8 P.C.C.-type passenger cars for local trolley service between St. Louis and Granite City ($310,169)
- 12 new passenger buses for local service ($113,190)
- Enlargement and rearrangement of the freight yard at Madison ($82,581)
- New diesel shop and servicing facilities at Madison ($113,655)
- Entirely new terminal facilities at East Peoria ($225,000)

The program is not stopping, either. On order are 100 new all-steel gondolas, 100 all-steel hoppers and 25 65-ft. low side gondolas. A new warehouse is being built at St. Louis at a cost of $200,000. Studies are being conducted on a proposal to spend $1 million for entirely new mechanical shops at Edwardsville, in a move to centralize hitherto scattered facilities, inherited from several predecessor companies. Centralized maintenance at Edwardsville would cut present costs substantially—as, for example, considerable intershop movement of parts and materials now is unavoidable. Also, none of the present shops are so located that one could be economically expanded to the exclusion of the others.

As the road's mechanical department is called upon to maintain diesel locomotives, electric locomotives, a wide variety of electric passenger cars and a small fleet of local buses, it has met some inventory and shop equipment problems that may be unique in America's railroad industry.



Streamlined electric passenger trains like this handle the main line schedules between St. Louis and Peoria.

Changing a railroad from a mere service adjunct of another industry to an active terminal and line-haul carrier is not a task to be accomplished overnight.

It has involved the development of an agressive traffic department whose efforts have helped alter the character of the road's freight business from one of local short hauls to what is predominantly a through interline service. This change was backed by a thorough revamping of freight operations and by the establishment of "time" freight runs on all main lines.

Knowing that the best traffic representatives are those who have a first-hand knowledge of their railroad, William Long, traffic vice-president, makes sure that members of both the on- and off-line staff visit all of the key points on the system.

Further coordination between the traffic sales force and the operating department is fostered by A. S. Taylor, freight traffic manager—sales and service, who, at least once each year, makes a "tour" of every yard office on the railroad talking with yard clerks, switchmen and yardmasters, picking up traffic tips as well as pointers for better teamwork. This informal interchange of ideas is later relayed to the entire sales staff during his regular visits to both the on- and off-line agencies.

The IT now has off-line representatives in 13 major cities—San Francisco, Pittsburgh, Tulsa, Chicago, Cleveland, Dallas, Memphis, Atlanta, Kansas City, New York, Milwaukee, New Orleans, and Minneapolis.

One of the fastest-growing industrial areas served by the IT is that which lies on the east bank of the Mississippi between Venice, Ill., and Alton. Many large plants —including several oil refineries—are located in the Alton-Federal-Wood River-Roxana area where the IT maintains two separate main lines devoted entirely to freight service. A third line is devoted entirely to the suburban passenger traffic of this densely settled area. By keeping these freight and passenger services segregated, switching service to industries can be "tailored" to the industries' needs without conflict with the constant flow of passenger trains.

With the exception of the Alton-Grafton rail bus and a few local bus routes within the city of East St. Louis, all IT passenger services are holdovers from the electric interurban lines that were absorbed into the system. The private automobile has cut heavily into traffic of the longer routes despite postwar improvements that included the three electric streamliners, fast express schedules and modernization of many of the older interurban cars. While these services continue today, the number of runs has been reduced substantially. Even so, the service is more frequent than one would expect for a territory that is so predominantly agricultural.

The suburban service between St. Louis and Alton remains busy, but, in company with almost every other suburban service, it is unrewarding, and the company is seeking to convert to bus operation. Local service over the McKinley bridge between St. Louis and Granite City is carried on by the postwar built P.C.C.-type street cars and a reserve of older light weight suburban cars.

Just how long these vestiges of the interurban railway era will remain with the Illinois Terminal is a matter of conjecture. Mr. Ward has told *Railway Age* that so long as no major reconstruction of the electric power distribution system is necessary, it is cheaper to continue operations with electric motive power. Nevertheless, under emergency conditions, diesel road-switching locomotives have already handled freight trains over much of the Traction division and there are few—if any—physical restrictions that would prevent eventual conversion to all-diesel operation.

The McKinley Bridge

Even public highway traffic enters into the Illinois Terminal revenue picture.

The McKinley bridge over the Mississippi river at St. Louis—owned entirely by the railroad—is floored so as to permit passage of vehicular traffic. And for the convenience of this short cut to Illinois, 3,105,933 motorists paid $647,381 in toll charges last year.

Presently, the road is reflooring these vehicular lanes with steel decking at a cost of nearly $1 million.

The bridge also serves as the IT rail entry into St. Louis for both freight and passenger trains. After leaving the bridge, they utilize the road's high speed double track elevated and subway route to the large, modern Central Terminal building on 12th Boulevard.

Known as the Muskego Yard office, this new building at Milwaukee is also the CMSP&P's general yard office for the recently modernized Air Line classification yard. The first floor is devoted entirely to the welfare of male employees whose tour of duty terminates here. The penthouse contains offices for train director and yardmaster.

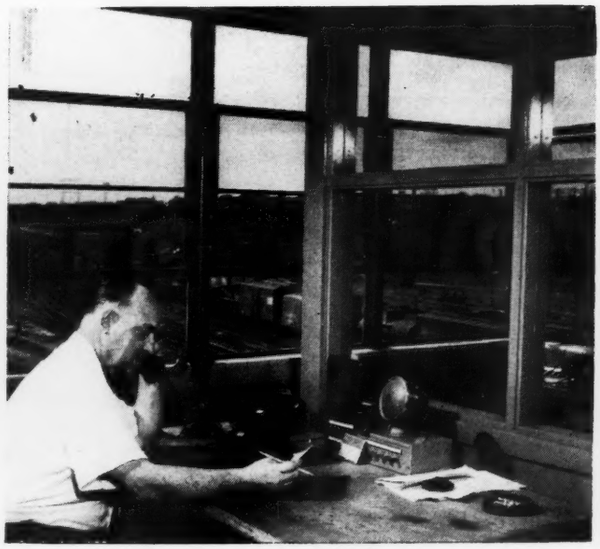
The old yard office, no longer needed and too old and dilapidated to warrant salvaging, was quickly wrecked by a crane with a clamshell bucket, which chewed the building to pieces and loaded the debris into gondola cars.

This Yard Office Is Attractive And Easy to Clean

The Milwaukee constructs a building of modern design to provide offices and service facilities for 350 men

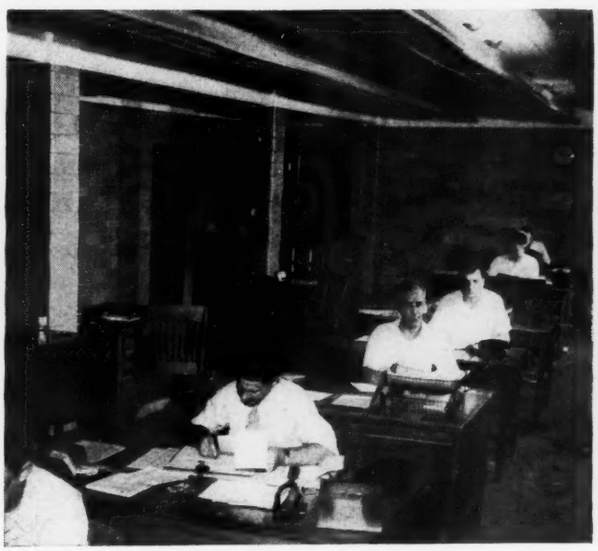
One of the last places a person would go looking for a railroad yard office is at a city park. But that is just where the Muskego Yard office of the CMSP&P is situated at Milwaukee, Wis. What's more, this new building was designed to enhance the appearance of the park.

Located approximately at Twenty-Third street and the railroad's right-of-way adjoining Milwaukee's Mitchell park, the building is a two story structure, 38 ft. wide by 123 ft. long, having a full basement and a penthouse. It is designed to provide offices and welfare facilities for employees working in Muskego yard and the recently modernized Air Line yard.



W. T. Cahill, general yardmaster, has a good view of operations at the east end of Air Line yard where trains leave Milwaukee for the south and southwest.

The assistant superintendent's office on the second floor is temporarily taken over by three operating officers for an informal conference.



One of the largest office areas in the building is the car record office. The ceiling has acoustical tile.

Welfare facilities for 350 train and yard service employees are provided on the first floor.

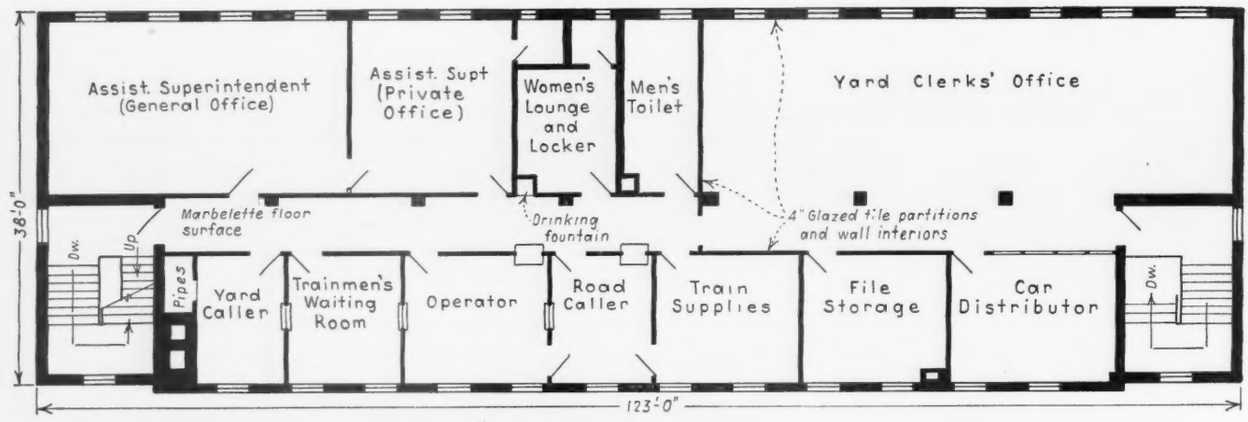
The structure is of fireproof construction throughout, with reinforced concrete foundation, walls, floor slabs and roof slabs—all supported on a timber-pile foundation. The outside of the building is covered with a smooth-face red brick, while on the interior the walls and partitions are of buff-colored glazed tile. The interior surface of the stair halls are of gray "Granatex" face brick. The old yard office, which was of wood construction and so located in the yard that it was surrounded by tracks, has been removed.

The basement of the new building contains a boiler room, a record room, and an area 35 ft. by 70 ft. for holding meetings and for the assembly of groups for instruction. The first floor is entirely devoted to welfare facilities for male yard and train-service employees whose tour of duty terminates at this building, and is equipped with lockers, toilets and washing facilities for 350 men.

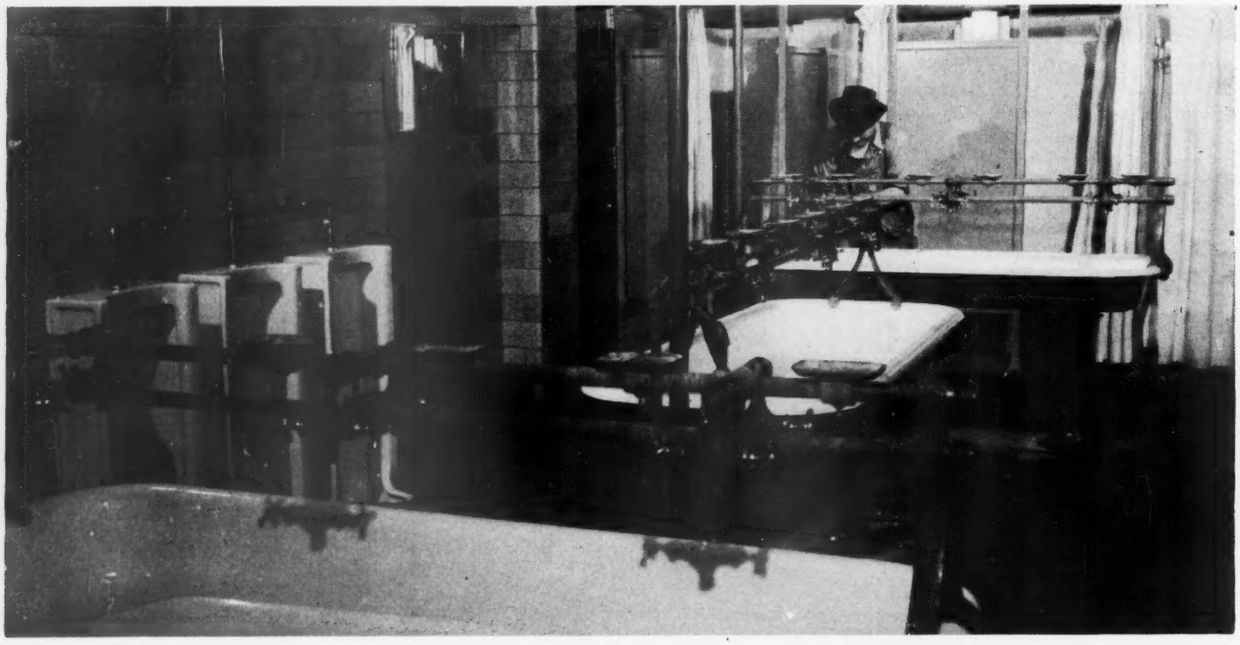
On the second floor there are offices for the assistant superintendent and his staff including yard clerks, car distributor, road caller, operator, and yard caller. A trainmen's waiting room, a train supply room, and a women's lounge and rest room are also on this floor.

Offices of the train director and the yardmaster, to whom a view of the entire yard is of utmost importance, are in a penthouse at the third-floor level at the west end of the building. To permit maximum visibility, continuous steel sash were placed on three sides of the penthouse. They are glazed with heat-absorbing plate glass to reduce glare and heat. The roof slab over this area projects 4 ft. beyond the sidewalls to provide a visor against the sun.

Fenestration throughout the first and second floors and basement consists of projection-type steel sash, while cut-stone trim is used around the exteriors of the window openings and for the parapet coping. High-intensity



Floor plan of the second story of the new Muskego Yard office.



Materials making up the floors and walls in the washroom, as well as the appurtenances, were selected to promote easy maintenance and sanitation. The wash basins installed in the shower room are of a type preferred by the employees using this building; with them, half a dozen men can clean up at the same time.

fluorescent lighting fixtures are provided in all the offices. Ceilings throughout the offices and the penthouse are surfaced with acoustical tile to absorb sound, and the floor slabs are surfaced with red composition flooring.

Six Complete Air Changes Hourly

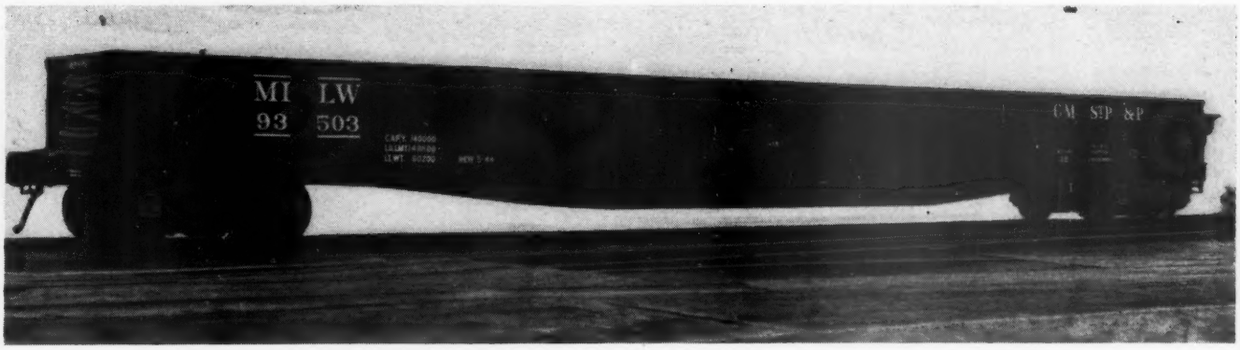
The employees' toilet and locker room on the first floor is equipped with a mechanical ventilating system whereby fresh outside air is introduced into the building, circulated and exhausted, to provide six complete air changes per hour. The heating of this area is accomplished by passing the incoming air over thermostatically controlled steam coils where the amount of steam is regulated by a motorized valve to maintain a comfortable temperature, regardless of the outside weather.

Heating of the remainder of the building is by means of wall-hung cabinet convectors thermostatically controlled in three zones. Throughout the floor slab of the office area on the second floor, a network of raceways has been provided for the wiring for telephones, Teletype and the various communication and signal circuits required within the building. These raceways will provide flexibility in making changes in the wiring.

The entire structure has been designed of materials which will assure durability, easy cleaning and pleasant decor. The glazed-tile wall surfaces and impervious floor finishes were selected because they are easily cleaned. The relatively small surface areas which are painted, such as the ceilings, doors and trim, are in colors which conform with the theory of color dynamics. The floor slabs of the second floor were left exposed on the undersides, and particular care was exercised to get a smooth finish there so that it could be painted with a rubber-base paint as the ceiling for the first floor.

A new driveway from Mitchell park, with a floodlighted parking area adjoining, serves the new building.

This yard office was constructed under the general direction of W. G. Powrie, chief engineer, while the general design and detail plans were prepared under the supervision of K. E. Hornung, architect.



U. S. Steel is urging that 10 per cent of all gondolas built be 65 ft. 6 in. in length.

Says L. L. Adams of U. S. Steel . . .

"Make the Freight Car a Better Traffic-Competitive Tool"

For some years a subcommittee of the loading rules committee of the Mechanical Division of the Association of American Railroads and a subcommittee of the American Iron & Steel Institute have met and jointly discussed loading rules for open top cars used in transporting steel. According to L. L. Adams, manager transportation planning of the United States Steel Company, this effort "has been mutually valuable. From these discussions come new loading rules, elimination of obsolete requirements, reduction in hazards to other movements and the public, reduction in damage to the commodities and equipment, and the many advantages that accrue to both sides when informed and reasonable men meet to discuss common problems."

Mr. Adams expressed these views in a paper presented at the recent Mechanical Division annual meeting in San Francisco (*Railway Age*, July 14, page 74). He declared that "we have learned that the railroads do not maintain loading rules simply for the harassment of shippers, and the railroads, I hope, have learned that we in the steel industry are anxious to load and fasten shipments in a manner that will provide safe and prompt movement from origin to destination."

The speaker did not include reduction in the costs of loading among the advantages that steel shippers have gained from their joint effort to improve the loading rules picture. "While the comparative costs may have lessened if we consider dollar purchasing power in an earlier period and today," he explained, "actual costs of loading our commodities have increased alarmingly. Furthermore, highway transport availability and utility have improved rapidly.

"In many instances our commodities can be loaded upon trucks at much less cost than they can be loaded on rail cars. Most open top trucks are equipped with devices for fixing loads of steel on the truck. Very little dunnage—and almost no labor—is required on the part of the shipper. Highway vehicles are not subjected to the strains and impacts of rail movement. Riding on rubber, with improved spring suspension and with the load made an integral part of the vehicle by the tie-down devices, the shipment does not need the expensive blocking required for rail movement. In many cases also, materials that require wrapping, shrouding or other costly protection when moved by open top rail car, can be fully protected by a tarpaulin provided by the highway carrier. This means that in many instances the final price of steel to the customer is less if it is shipped by truck than if shipped by rail."

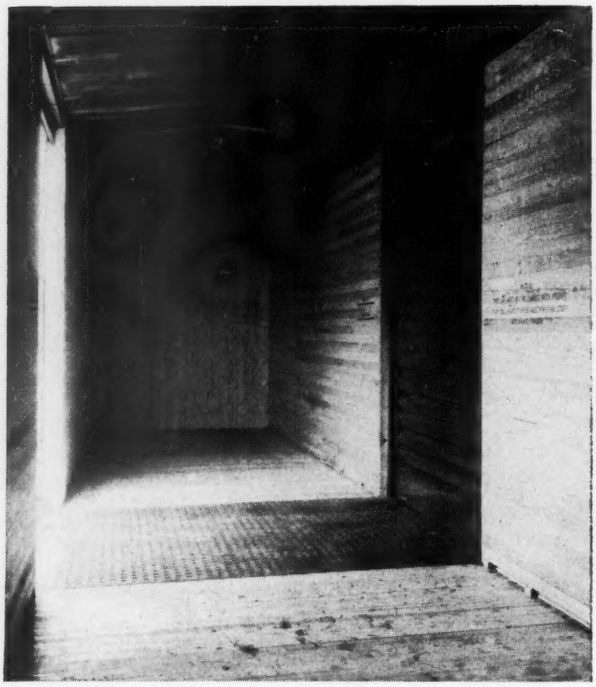
Competitive Business

The steel business, said Mr. Adams, is highly competitive. There is intense competition among producers of steel and between steel makers as an industry and manufacturers of commodities competitive with steel. "Direct costs, such as those of wrapping and shrouding, or indirect costs, including labor and materials expended in fixing shipments to rail cars, cannot fail to affect the decision of steel producers and steel purchasers in determining whether a particular shipment shall move by rail or by truck. It is to our interest to see that our shipments go through to destination promptly, without damage and without subjecting property or persons to undue hazard. It is also necessary for us to consider the cost of doing it. The high cost of complying with railroad loading rules is of importance to railroads as well as to producers of steel."

Because "for a considerable portion of the last ten years there have not been enough freight cars, particularly of certain types," and because "many cars have grown old in service and need to be replaced with larger and better models capable of being operated with less shop time," Mr. Adams asserted that the nation needs to maintain a heavy car building program to offset losses, and to enable the railroads to meet increasing demands for service.

"U. S. Steel has been urging that more gondolas be

"The nailable steel floor has passed the experimental stage." Composite steel and wood floors are being tried.



"The industrial type box car should have a steel plate across the floor at the door and a strong floor."

constructed, especially by roads in the industrially expanding West and South. We suggest that at least 10 per cent of the gondolas built be 65 ft. 6 in. long. Loading long material on short cars, with idlers or with bearing on two cars, is wasteful of car supply and very expensive to the shipper. Half of the gondolas built should have floors to which dunnage can be nailed. In the past this has meant wooden floors. Today that is not necessarily true. The nailable steel floor has passed the experimental stage. A steel company and some railroads are experimenting, with apparent success, with composite steel and wooden floors. The objective is to combine the strength and durability of steel with the opportunity for reduced loading costs when bracing can be nailed to the floor. Building into cars better provisions for bracing, or fixing loads with bands, will decrease the damage that results when holes must be cut or burned through car floors and sides in order to properly fix loads on cars.

"We also urge the construction of more 70-ton capacity hopper cars to make it possible for us to reduce the number of cars handled in our mills and mines. Cars of greater capacity offer an opportunity for reducing transportation costs through reduction of dead weight per ton of commodity carried, and in billing, clerical and administrative costs. Also, less yard capacity is needed when cars have greater carrying capacity.

"A relatively new problem in the hopper car field is the effect of using car shakers. Apparently the car shaker is here to stay, because it is the best answer yet devised for hastening the unloading of many commodities under adverse conditions. Accordingly, we think that railroads must expect their hopper cars to be subjected to shakers and should design them to withstand the effects of these devices."

Mr. Adams was of the opinion that there are advantages to be gained by modification of car types, or by bringing forth new types of cars. He said, however, that "it is usually a difficult task to convince railroads that new or unusual types should be built. Two cars of fairly recent origin that have proved their value are the 65-ft. 6-in. gondola and the covered hopper. The only problem with either one today is that they are rarely in sufficient supply. Both cars were developed by industry with little or no support from the railroads.

Covered Gondolas?

"Other problems are waiting to be solved. Much steel requiring protection from weather is loaded on open top cars or trucks. This material must be wrapped and shrouded with paper when loaded on open top rail cars. However, it can usually be shipped by truck with no other protection than paper wrapping and the tarpaulin furnished by the trucker. An interesting answer, for the railroads, could be a covered gondola. Different types of sliding, telescoping and removable hatch covers are in use on river barges and lake vessels. Several different kinds of removable covers have been used on railroad flat cars from time to time. Perhaps from these devices ideas can be developed that will make possible suitable covered gondolas. An answer to this problem would help the railroads competitively.

"What about wide loads?" Mr. Adams asked. "If gondolas of moderate length could have greater inside width they would simplify the loading of many shipments that today present problems. Thousands of flat car loads which we have made at great expense and with difficulty would have been simple and relatively inexpensive if 120-in. wide gondolas had been available. Such a car could be used in any service to which a gondola is usually put.

"The steel industry believes in, and practices, heavy loading of freight cars. We think that one of the best competitive opportunities that the railroads have is in the heavy, volume-freight field. We have been very happy to see the trend toward 70-ton capacity cars. It may now be the time to take the next step, at least with hopper cars. Ninety ton, four-wheeled trucks seem to be the

The steel industry is urging the railroads to build more "industrial type" box cars with doors 8 ft. wide, like those on this B & O car.

practical answer to the objection that six-wheeled trucks are too complicated and troublesome for freight service. One railroad that has a heavy trade in both iron ore and coal has quite a fleet of 90-ton hoppers and is building more. At least one other railroad now has 90-ton hoppers on order, and we confidently expect that other such orders will be placed.

"Cars of this capacity are subject to a limit of 251,000 lb. on the rails. To the plea that there are still some railroad structures that will not take this load I suggest that a considerable number of such cars can easily be busy on heavy duty railroads in volume business. I can see no reason for withholding the obvious advantages that exist in so many instances merely because the car could not be used universally. Furthermore, structures and ways are being improved constantly, so that the areas in which heavy cars cannot be used are being reduced. In building cars to carry more freight per unit, saving of light weight in the car itself is important. High-strength, low-alloy steels have proved valuable in reducing light weight and in providing greater strength.

Freight Speed Increased

"Modern motive power has greatly increased freight train speeds, and greater tonnage on trains," Mr. Adams pointed out. "Where freight moved at 30-40 m.p.h. some years ago, 60 is a normal speed today. However, most of our freight cars were built for the slower speeds. Trucks, draft gear and spring suspension were designed for much slower freight train speeds and for lower switching impacts than those of today. Vertical oscillation, lateral sway and slack action under new train speeds and high speed switching impacts, give the freight and cars a beating. We need the faster movement. Shouldn't we build resistance to its effects into our cars?

"The General American-Evans [DF] car provides an interesting attempt to do this through the use of a different truck design and means of cushioning end-to-end shock. Improved trucks and other devices to protect against some of the effects of greater speed and shock have been available for some time, but have not been used widely. Many of the new cars coming out do not seem to be built for today's faster speeds, at least not as far as protection to lading is concerned. The cost of freight loss and damage demands action. I would point out that we shippers have a direct interest in this cost —we pay for it in the end.

"We hope that [in the future] every possible effort will be made to hold the bad order percentage to an absolute minimum. Two years ago the high percentage that had been allowed to develop was a deterrent to the effort all of us were making to reach peak industrial production.

"It also resulted in additional business going to the competitors of the railroads because the rails did not have enough cars in good condition to handle all the freight that was available to them."

Mr. Adams added that he had been much interested in the decision of some of the coal railroads to build greater strength and longer life into hopper cars by using high strength steels in the thicknesses normally used when such cars are built of carbon steel, or, in some cases greater than normal thicknesses. "It is believed," he said, "that these cars will go double the normal time before classified repairs are necessary.

"Whether the objective is to make possible the greatest practicable payload capacity in the cars, to make your allotted tonnage of steel produce more cars, or to build more strength and longer shop-free time into them, the high strength low alloy steels present many challenging opportunities. In any case, it appears to many of us shippers that it is possible to build freight cars that are better suited to the requirements and conditions of the 1950's instead of cars fundamentally the same as those built 30 years ago. It is good to see that the railroads are tackling some of the problems involved in modernizing the freight car fleet."

With waybills in front of him, a checker, using the telephone, can work with two or three crews at a time.

How the Northern Pacific Uses

Telephone Checking in Seattle Freighthouse

Three checkers in foreman's office work with several crews; checker has telephone headset and console; crew uses portable telephone

To speed checking of l.c.l. shipments the Northern Pacific has installed a telephone checking system in its Seattle freighthouse. Three checkers, working in the foreman's office instead of on the platform, are able to work with several crews at one time. To maintain contact, each crew has a portable telephone which is plugged into an outlet near the door of the freighthouse and taken into the car or truck being worked.

The Seattle freighthouse is 1,000 ft. long and 40 ft. wide. On one side is a track on which freight cars are spotted opposite house doors. A 40-ft. driveway on the other side is used by motor trucks that deliver or receive freight.

A telephone can be plugged into outlets located at 15 doors on the track side and 4 on the roadway side of the freighthouse, or at each of these locations a 50-ft. extension cord can be unreeled.

Starting work, a crew (one loader and three truckers) pick up a portable telephone set and go to the car to be worked. The loader connects the instrument to the receptacle nearest the door. Next, he pushes and holds the "call-in" button on a nearby post. Using the "push-to-talk" button on his portable phone he gives the crew number and door at which he is located.

This report will come out over the "call-in" loudspeaker in the foreman's office which all three checkers can hear. The crewman then releases the "call-in" button. The checker handling the crew throws a key switch on his console, which connects his head telephone set to the telephone line to the crew, and remains so connected until the crew moves to a new spot.

As many as three telephone lines are connected by the checker through his console to his head telephone set, so that he is available to his assigned crews at all

Loader uses portable telephone to receive "spot" numbers from checker to mark on packages.

times. The "call-in" loudspeaker system is normally used only at the beginning of a shift or other work period. The portable telephones used by the crews operate on the push-to-talk, release-to-listen principle. This minimizes the extraneous noises heard by the checker.

As the gang's loader calls out the consignee and destination of each package the checker, in the central office, with the waybills in front of him, will call the "spot" number to mark on the package.

Paging System

Eight paging speakers are located about the freight house. Paging is used by checkers to locate crews; by the foreman to locate individuals; and to obtain the services of fork-lift trucks. A loading crew can request a truck from the checker via telephone. The latter, in turn, calls for an operator, using the paging system. A "paging busy" lamp will light on all telephone cabinets. When the checker finishes calling for the truck, he restores the paging key, which disconnects his headset from the paging system, and extinguishes the "paging busy" lamps on the cabinets. By this means a crew member does not have to leave his work to go about the house looking for a truck.

Advantages of Telephone Checking

In a central location in the foreman's office, each checker has ready access to the waybills, and can work with several crews at a time. While a crew is moving from one freight car to another, a checker is easily able to obtain the waybills for the new car. A pneumatic tube system connects the foreman's office to the main freight office. After a checker has given "spot" numbers of freight to one crew, he can give "spot" numbers to a second crew while the first crew is unloading the freight. In this manner, a checker can alternately work with two or three crews.

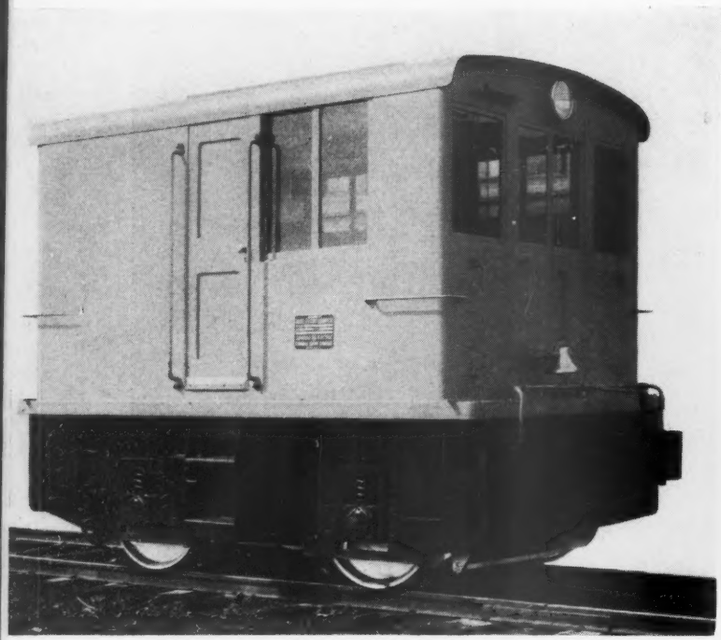
Prior to installation of telephone checking, the checker worked right in the car with the crew, carrying the waybills with him. Time was lost when a crew changed cars because the checker had to walk back to the office for a new batch of waybills. In some instances the paper work took much less time than the unloading of the freight, with the result that the checker often was idle, waiting for the crew to finish unloading.

Agent's Monitor Phone

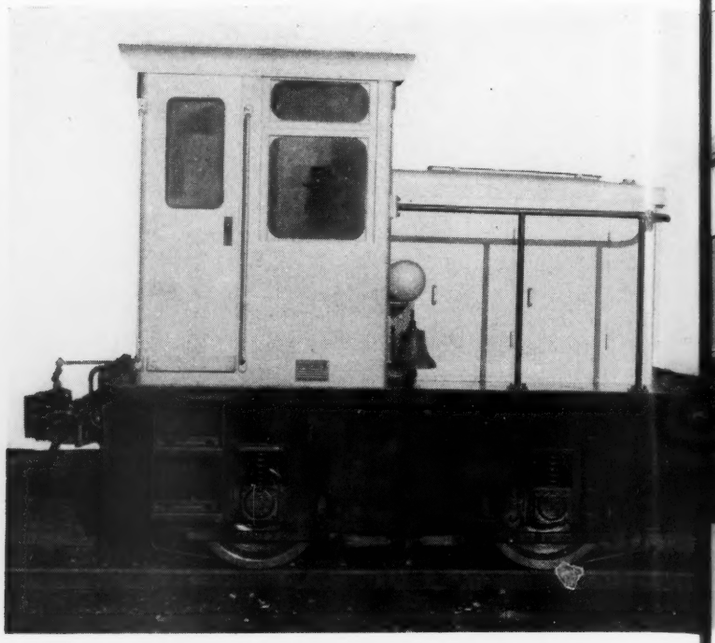
The freight agent has a phone on his desk by which he can call any checker. Also, if the agent desires to speak to a particular crew member, he calls the checker and has him operate a telephone type key on his cabinet which will connect the agent's phone to the line going to the crew's phone. This is helpful, for example in tracking down a particular package of freight for a shipper.

The portable telephones are the conventional handsets, permanently connected to a subset that is built into a wood-carrying case. The latter—built and wired by the NP—has a recessed plug in one end, to which the extension cord may be connected. The web strap by which these boxes are carried is looped over a nail driven into the side of a freight car when the crew is working in the car.

This system was planned and installed by communications forces of the NP under the supervision of F. L. Steinbright, superintendent of communications.



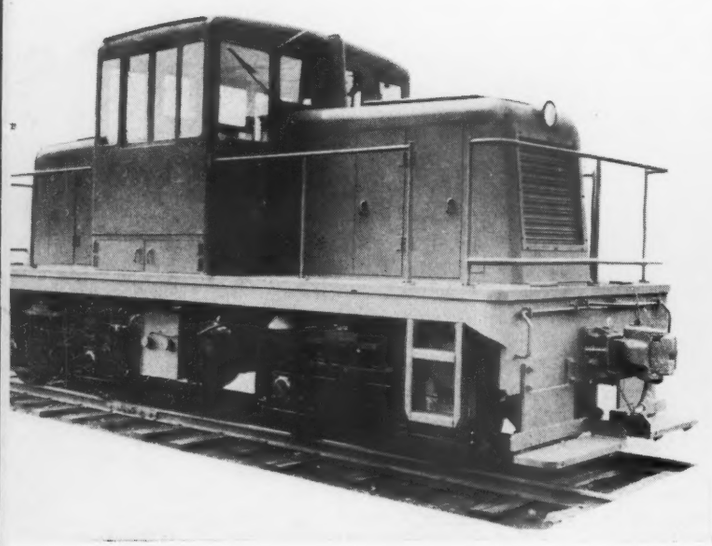
A 25-ton, 150-hp. locomotive built in 1941, showing beginnings of the present design.



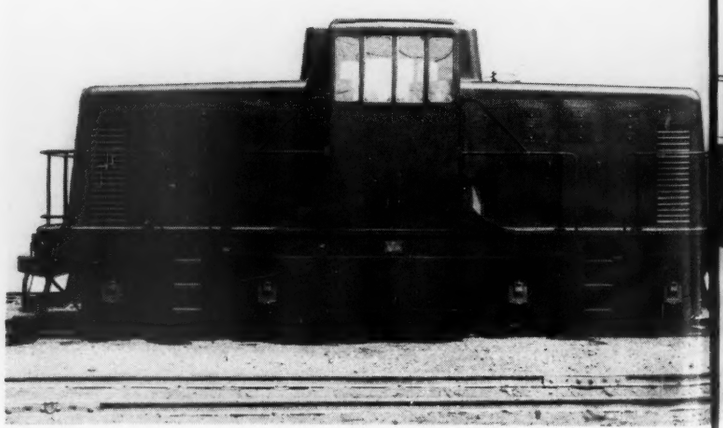
Early diesel-electric industrial locomotive, 23-ton, 150-hp., forerunner of the present industrial locomotive line.

Fifteen Years of Ind

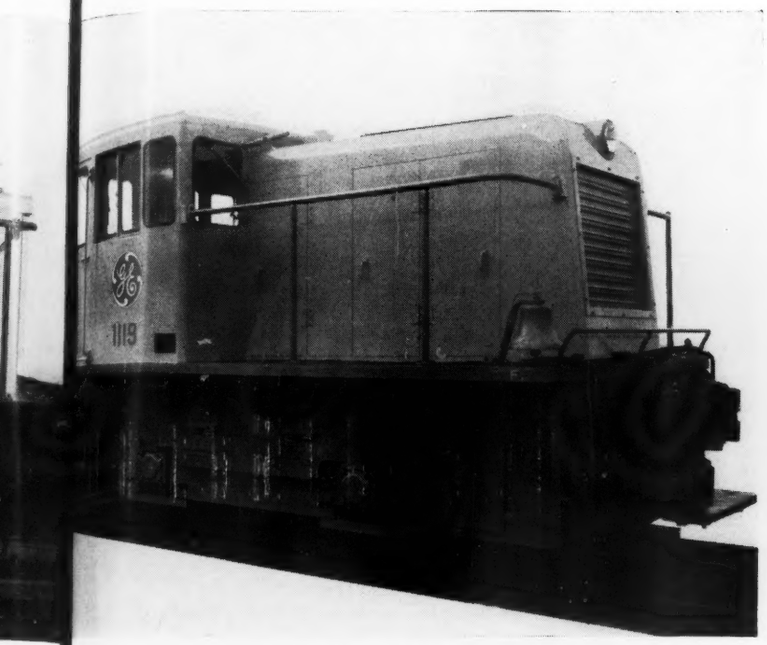
By R. W. BARRELL
Locomotive and Car Equipment Department
General Electric Company
Erie, Pa.



Present design of 45-ton, 300-hp. locomotive with chain drive between axles on each truck.



This streamlined design of a 65-ton, 400-hp. locomotive was built in 1941.

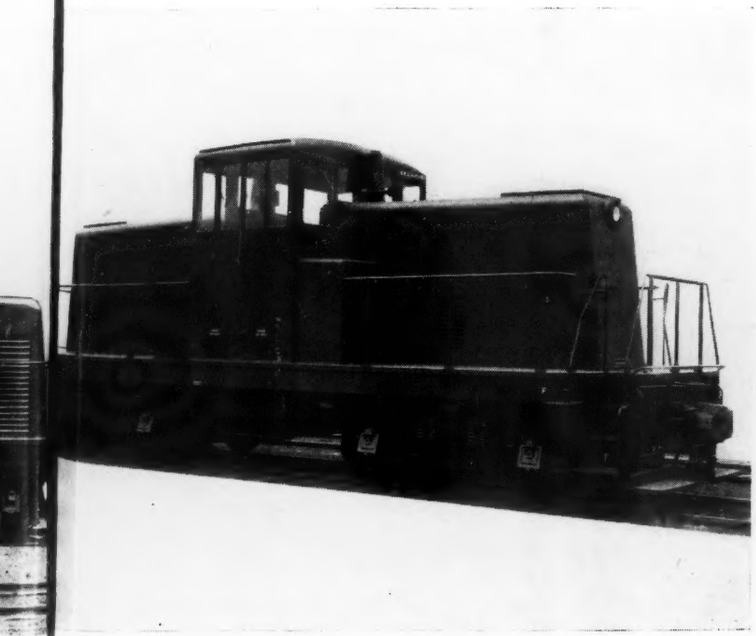


This modern 25-ton, 150-hp. locomotive shows the type of design common in 1951.

Earliest 45-ton, 300-hp., swivel-truck locomotive with side-rod drive between axles, built in 1939.

# of Industrial Diesel-Electric Switchers

A resumé of what the manufacturers have done to meet the needs of plant operation and to establish the diesel in this field



Present design of 65-ton, 550-hp. locomotive. The current 80-ton, 550-hp. locomotive is essentially the same.

Present design of 95-ton, 660-hp. locomotive with single engine and operating cab at one end.

The present standard line of General Electric industrial diesel-electric switching locomotives had its beginning in 1937, when the smallest unit was first built. Actually, the roots of this development run back some 60 years to the beginnings of the General Electric Company. Those early locomotives were just plain electrics—the diesel-electric offshoot appeared much later, but the lineage is unbroken, for they are still fundamentally electric locomotives—only their source of power is different.

Early Diesel-Electric Locomotives

As in the case of many developments, the industrial diesel-electric locomotive passed through a period of "cut and try" at its inception. The earliest switcher locomotives were heavy and expensive, and could only be economically justified in service where the load factor was high.

The picture was changed in the latter half of the 1930's by the development of low-cost, high-speed automotive diesels. Simultaneously, low-cost, high-speed electric drives were developed for the larger sizes of these new engines. Locomotive designers quickly decided to take the radical step of applying this combination to a switching locomotive.

Almost over-night the economic soundness of such a locomotive was proved, and a multimillion dollar business was born. Its continued success has been based upon customer acceptance and satisfaction. Four elements enter into this: (1) good performance and low operating cost, (2) low maintenance cost, (3) low first cost, and (4) good appearance. Let us see what progress has been made during the past 15 years in these elements.

Performance and Operating Cost

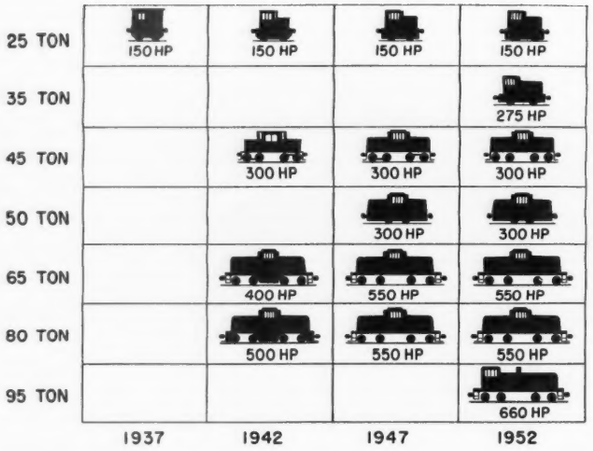
Since the inception of the standard General Electric industrial switcher line, a number of improvements have been made which serve to increase the overall locomotive efficiency and thus improve performance and reduce operating cost.

One such instance is the development of the high-speed traction motor, with double-reduction gearing. The motor was originally connected to the gear unit through universal joints. When it became evident that there was a field for locomotives of this kind, a double-reduction motor was designed especially for this application. This was followed by another motor, providing higher rated tractive forces and higher speeds. Today, just these two types of motors cover the entire industrial locomotive line from 25 tons to 95 tons. Concentration on the manufacture of these two highly specialized motors has permitted a refinement of design over the years until a high degree of standardization and interchangeability has been achieved. The pulling power of even the smallest of these economical locomotives is a revelation to those who witness their performance for the first time.

The use of double-reduction traction motors helps to increase locomotive efficiency by halving the motor losses at high tractive forces. In switching work, involving high tractive forces but not much speed or horsepower, this gain in efficiency is very real.

These motors are self-ventilated by a fan mounted on the armature shaft. This design eliminates the complication of external air ducts and the power losses involved in operating separate blowers. It has proved entirely successful in service.

Existing high-speed, traction-type generators were first applied without change to industrial locomotives. Some modifications were soon found desirable, the principal one being the incorporation of a cranking winding for starting the engine. The present design of generator has proven highly successful.



Development of standard diesel-electric switchers for industrial use.

Today, three types of generators cover the entire line of locomotives from 25 to 95 tons. These all have simple shunt-type exciting field windings. Up to the size used on the 95-ton locomotive, they are essentially self-excited. The latter model is excited by a belt-driven exciter of the split-pole type.

Control for these General Electric industrial locomotives has been consistently kept to a minimum number of functions and devices. The original control provided only "no power" or "full power." This was unsatisfactory if the operator wished to move the locomotive only a few feet. Now battery excitation is provided for the generator when only partial power operation is desired, and slow movements of the locomotive are easily accomplished. When more power is desired, the throttle handle is moved to give the engine more fuel. As the generator speeds up, the self-excitation increases and, in successive steps, the battery excitation is removed. No simpler control for a diesel-electric locomotive power plant has ever been devised, yet it enables utilization of practically full engine horsepower over the entire locomotive speed range. What little power reduction there is, applies only to the maximum power obtainable at full throttle, which is seldom used in industrial switching service.

These years have seen an evolution in the mechanical as well as the electrical aspects of the engine control. The engine governor has always operated only at idling and top speed, and the engine is controlled through the working range by giving it more or less fuel manually. On early locomotives, the throttle control mechanism left much to be desired. In the case of locomotives equipped with two engines, one engine would sometimes be doing all the work while the other was still running at low speed. Refinements in the design have overcome these difficulties. At the same time, the new mechanism is simpler and more direct in its operation than the old. The modern locomotive line is characterized by ease of control and responsiveness to the slightest wish of the operator.

Much has been done to simplify and standardize the air-brake equipment, and to improve brake operation. One example is the introduction of a better type of engineman's brake valve for straight air brakes. Another

This article is a summary by the author of a paper presented at the Summer General Meeting of the American Institute of Electrical Engineers in Minneapolis, June 23-27.

is the simplification and standardization of the combined automatic and independent brake equipment. Still another is the use of headers and pipe bends in place of numerous pipe fittings.

Early industrial locomotives had springs directly on top of the journal boxes. As the need for better riding qualities became increasingly apparent, the design was changed to the side equalizer type of construction. Standard freight car springs were used with the addition of friction snubbers in the spring nests to damp the spring action and give improved riding qualities.

Reliability has been one of the prime causes of the diesel-electric locomotive's wide customer acceptance and popularity. Constant improvements in design and manufacture have given it an average availability of between 90 and 95 per cent. This is an important consideration for industrial plants operating a single locomotive. It also has a decided advantage in larger installations, where it enables the operators to meet their needs with a minimum number of locomotives.

Maintenance

All this progress has done much to increase the life of the various locomotive components. Repair and replacement have been greatly simplified by improved design and better location of the parts. Careful designing makes the components readily accessible for servicing.

Locomotive service requires equipment that is able to withstand heavy shocks as well as other severe conditions, such as high temperature, excessive dirt and moisture, and a minimum of attention. In the case of control devices, these shocks become such a major problem that special designs had to be developed to operate successfully on diesel-electric locomotives.

All parts of the locomotive structure are designed and constructed to resist shocks and give long, satisfactory service. The trucks and platform are fabricated from steel plates and structural shapes. The superstructure is made from sheet steel and specially formed stiffeners. Welding is used to a maximum throughout the entire structure.

Whenever possible, long term lubrication is provided for roller and ball bearings so that they will not require any attention between the normal overhaul periods for the equipment in which they are used. Most traction-motor and main-generator bearings are now lubricated by this method.

Many of the standard components of these General Electric industrial locomotives may be handled on the unit exchange plan. This enables the operator to turn in to the manufacturer a part for repair or overhaul and receive in return, without delay, a duplicate part ready for installation on his locomotive. Such service is particularly beneficial to the industrial plant operating one or two locomotives, as it eliminates the necessity of maintaining repair facilities and skilled personnel to care for the locomotives.

First Cost

These locomotives were designed as a uniform line. Duplication of parts and equipment through the range of sizes was carried out to the fullest degree. Parts common to the various sizes of locomotives were standardized so that the benefits of repetitive manufacture could be realized.

The development of tools and machines for producing spot-welded stiffeners and sections has resulted in the production of a locomotive of superior quality at a low cost. Previous to the introduction of spot welding, the cab had been built much like a house. A framework of structural members was arc-welded together and then the cab sheets were arc-welded to it. Now, the framework is made of formed sheet steel which is spot-welded to the side, end and roof sheets as a separate assembly. These subassemblies are then welded into a cab.

Other examples of standardization are the change in the design of the uncoupling levers permitting them to be pressed instead of forged; and the reduction of the number of bushing sizes in the brake levers from 81 to 6.

Subassemblies Speed Production

The use of subassemblies in the manufacturing process speeds up the cycle. For instance, locomotive platforms are delivered to the assembly floor with the fuel tank and air reservoirs already installed. As much of the electric equipment as possible is assembled and wired at benches before being sent to the assembly floor. This includes the control compartment, in which the control equipment is completely assembled and wired on the bench. Operating cabs and engine cabs are produced in another section and are largely complete when brought to the locomotive assembly line.

All industrial locomotive trucks, whether of the swivel or rigid-frame type, are fabricated. The parts are burned out of steel plate and, where necessary, machined prior to their fabrication and final assembly. Wearing surfaces, such as pedestal jaws and center plates, are equipped with hardened renewable liners. When laying out parts, they are grouped on a plate so as to make maximum use of the material. In this way, small parts are cut out of what would otherwise be scrap. In some instances, the total material waste amounts to only about 3 per cent of the weight of the truck frame plus equalizer bars.

Appearance

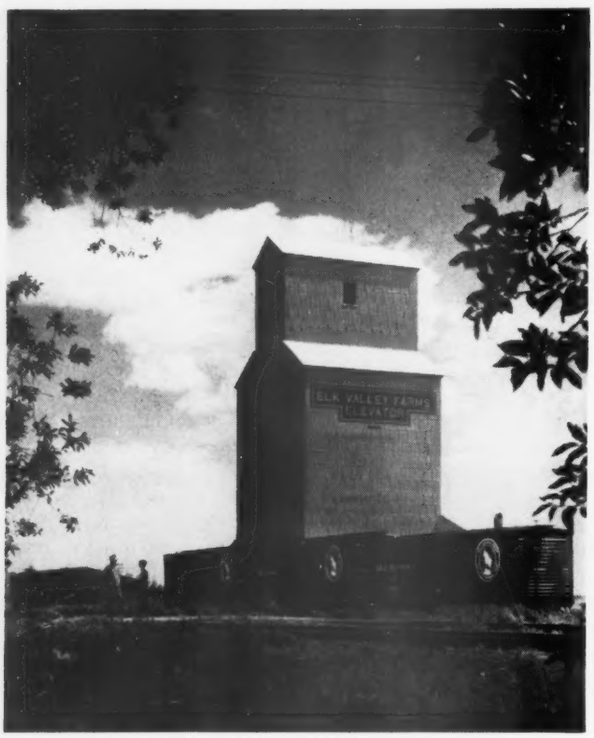
The duplication of parts and the use of common tools has led to a similarity of appearance throughout the industrial switcher line. Furthermore, the original unattractive, box-like form has been streamlined. In most cases this was the result of improved manufacturing processes. The best quality of modern synthetic paints and lacquers is used to give durable finishes. A wide range of colors is available to suit the individual customer's taste. The sleek, colorful, modern industrial diesel-electric switcher truly has a definite eye appeal.

Great progress has been made in the design of the General Electric industrial diesel-electric locomotive line. Quality of performance and appearance have improved, while the elements of cost have been reduced. Rising first costs have been offset, in a measure at least, by design simplification, and by more economical use of materials. Similarly, the constantly mounting costs of labor and material for operation and maintenance have been to some extent offset by numerous design improvements resulting in increased reliability, higher efficiency, greater ease of operation, longer life of expendable parts, and simpler maintenance. The result of this development program is that a complete line of locomotives, adequately covering a large segment of the industrial switching and haulage field, has been developed and stabilized. Today American industry has the advantage of choosing from seven standard sizes of locomotives, well-established as to design and in steady production. This means that any purchaser is able to select the type and size of locomotive that most accurately and economically meets his needs. He also has the advantage of obtaining a modern, efficient, standardized unit, backed by years of design experience and manufacturing know-how.

Diesel engineman's view of a country elevator. Hundreds are filled with wheat from the farms of the Southwest. Photo taken through the windshield of a diesel locomotive.

Peak Wheat Harvest Load Moves To the Northwest

Plain box car supply westward getting back almost to normal —Spring wheat crop not as large as originally estimated



Country elevators in the Northwest, such as this one at Larimore, N.D., on the Great Northern, soon will be bulging with spring wheat.

The first days of August mark the end of a short lull in the heavy-volume movement of wheat, for beginning about that date harvesting of the spring wheat crop begins in the Dakotas, Montana and Minnesota, while the tag end of the winter wheat harvesting will have arrived in the Plains states and in Illinois, Indiana and Ohio. Not that there will not be wheat moving out of that area and the Southwest, for there will be, but the railroads' car supply problem is over the hump in these areas.

Other measures of how well the railroads handle the harvest are the number of blocked country elevators and the amount of wheat stored on the ground. There are 5,305 country elevators in the Southwest. No more than 500 of these were blocked on any given day, while the average during June was only 111 per day, less than two per cent of the total. Also, no more than one-half million bushels of wheat ever was stored on the ground at any one time, a figure to be compared with a production that in Kansas alone was about 300 million bushels.

Ample Car Supplies

It does not seem too likely, at this writing, that there will be any serious car supply difficulties in the Northwest, for the spring wheat crop in that area is going to be considerably smaller than originally expected (around 200 million bushels as compared with the earlier United States Department of Agriculture estimate of 265 million

bushels). And, as can be seen from the table, the current car supply on the Northwestern roads of the United States is relatively good. The Car Service Division of the Association of American Railroads expected to have the Northwestern roads ready for the harvest about August 1 with a supply of plain box cars equal to 100 per cent of their ownership of such cars. Definite figures showing how well that aim was accomplished will be available in a few days.

Wheat Movement Earlier Than Predicted

In last month's Freight Traffic Issue of *Railway Age* it was pointed out that the peak of the wheat movement in the Southwest could be expected about July 4. Actually, the peak was reached somewhat earlier, on June 30. almost a week ahead of the prediction. On June 30 at Kansas City there were in the terminal ready for unloading 6,881 cars of wheat, while 1,424 were being held outside the terminal because of lack of room. By July 4 these figures had declined to 6,300 and 1,200 respectively, and the decrease has continued since that date. From mid-June to July 12 a daily average of 2,400 carloads of wheat were held out of terminals in that area.

With this decline in loadings in the Southwest the wheat harvest as a threat to tight car supply in that area is over.

Meanwhile, however, winter wheat loadings in the Ohio-Indiana-Illinois area picked up to the point where they were running 1,350 cars per day in mid-July, with the New York Central alone handling 700-1,000 cars daily. By the date of this issue, however, most of the harvesting in that three-state area will be over and the "heat" will be off the Eastern roads.

As a consequence of the end of the heavy wheat loadings in the Southwest, Special Car Order No. 86, effective July 1, was annulled effective July 21. This order had directed the Southwestern roads, in effect, to create an area "pool" of plain box cars by keeping their cars at "home" and sending ownerships of lines in the area home to the owning lines as expeditiously as possible. The only special order now in effect, therefore, is the provision of No. 85 which directs Eastern and Southeastern roads to send home to the Northwestern roads plain box cars of their ownerships, i.e., Chicago & North Western, Great Northern, etc.

Also, as of the end of July, the Southwestern embargo mentioned in the July 7 Freight Traffic Issue has been removed. Getting through a harvest season with only one embargo (and that only a partial one) is a significant measure of the handling of the crop in the Southwest by the railroads and the grain trade, especially since during the harvest period (June 1-July 12) in which 67,000 cars were handled in 1951, the 1952 figure was 140,000. Where grain storage space at terminal elevators was only 60.6 per cent full on July 12 last year it was 64.4 per cent occupied on the same date this year. Since more storage space was available at the beginning of the harvest this year than in 1951, more grain has moved this year, yet a large percentage of it is staying in the territory and thus the railroads' car supply problem is somewhat simplified. However small the overall percentage of elevator occupancy may seem, individual terminal situations vary. Enid, Okla., grain storage was 98.1 per cent full on July 12 this year, for example.

During June, the Eastern and Southeastern roads, in their efforts to help carriers in the West, sent home through the major gateways an average of 1,490 plain box cars per day. In the first 17 days of July this figure had dropped to 1,107. This drop indicates the effect of the need for cars to handle grain in the East; the changes in Car Service Order No. 85; and the fact that a high

A Great Lakes steamer takes on a load of grain. About the end of this month this scene will be duplicated as the Canadian wheat harvest gets under way.

PLAIN BOX CARS ON LINE AND PERCENTAGE OF OWNERSHIP—1952

	June 1		July 1	
	On Line	Per Cent	On Line	Per Cent
Northwest*	98,600	93.7	98,300	93.9[1]
Southwest†	141,000	103.4	151,000	110.5

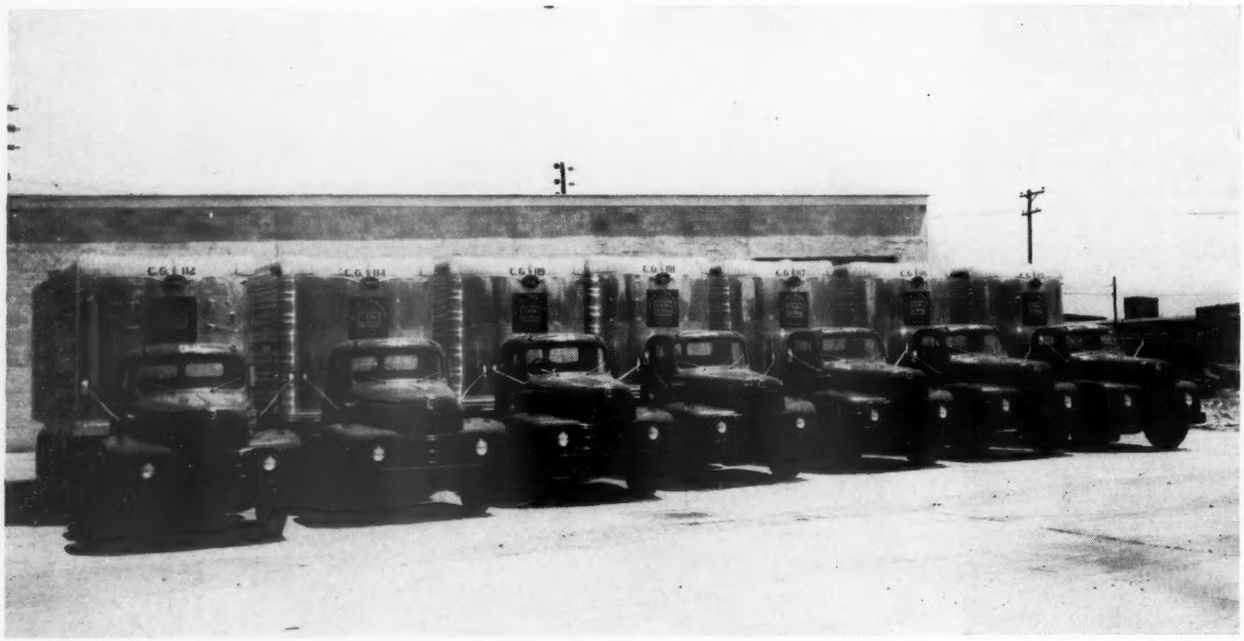
*Includes: C&NW; CSPM&O; CGW; CMSP&P; GN; M&SL; NP; and Soo.
†Includes AT&SF; CB&Q; CRI&P; FW&D; UP; MKT; MP; and SLSF.
[1] Ownership declined in period, thus while percentage is larger on July 1, number of cars on line is smaller.

percentage of western box cars are on home roads as a result of cooperation by the Eastern and Southeastern carriers in cooperation with the Car Service Division. According to the Car Service Division a normal westbound movement of western empty plain box cars, in order to keep interchange in balance, is only about 900-1,000 cars per day. Too, about 45.4 per cent of the box cars on the Western roads actually are of their own ownership.

Wheat Harvest Moves Efficiently

The prospect is that the wheat harvest now getting under way in the Northwest will be moved with a minimum of difficulty. Car supply is good, with some 6,000 cars stored near country elevators awaiting the peak movement. Committees composed of one or more railroad operating men from the lines serving the terminals in the area have been set up to begin work. These men will check, daily, to see that elevators have enough cars to keep dumping uninterruptedly, and that switching delays in general are held to a minimum. (Similar committees were set at Ft. Worth, Tex. and Kansas City this year.)

Elevator space is much more plentiful this year than it was in 1951. At the head of the lakes this year, 60.4 per cent of the space is occupied, compared with 75 3 per cent last year. At the Twin Cities, the situation is even more favorable. In 1951 elevators there were 63 per cent full, while this year only 39.2 per cent of available grain storage space is occupied.



Part of the large fleet of trucks and trailers operated by the CofG Motor Transport Company.

Central of Georgia

Rail-Truck Service Speeds Deliveries

Coordinated highway operations improve schedules to local points and save car days as well

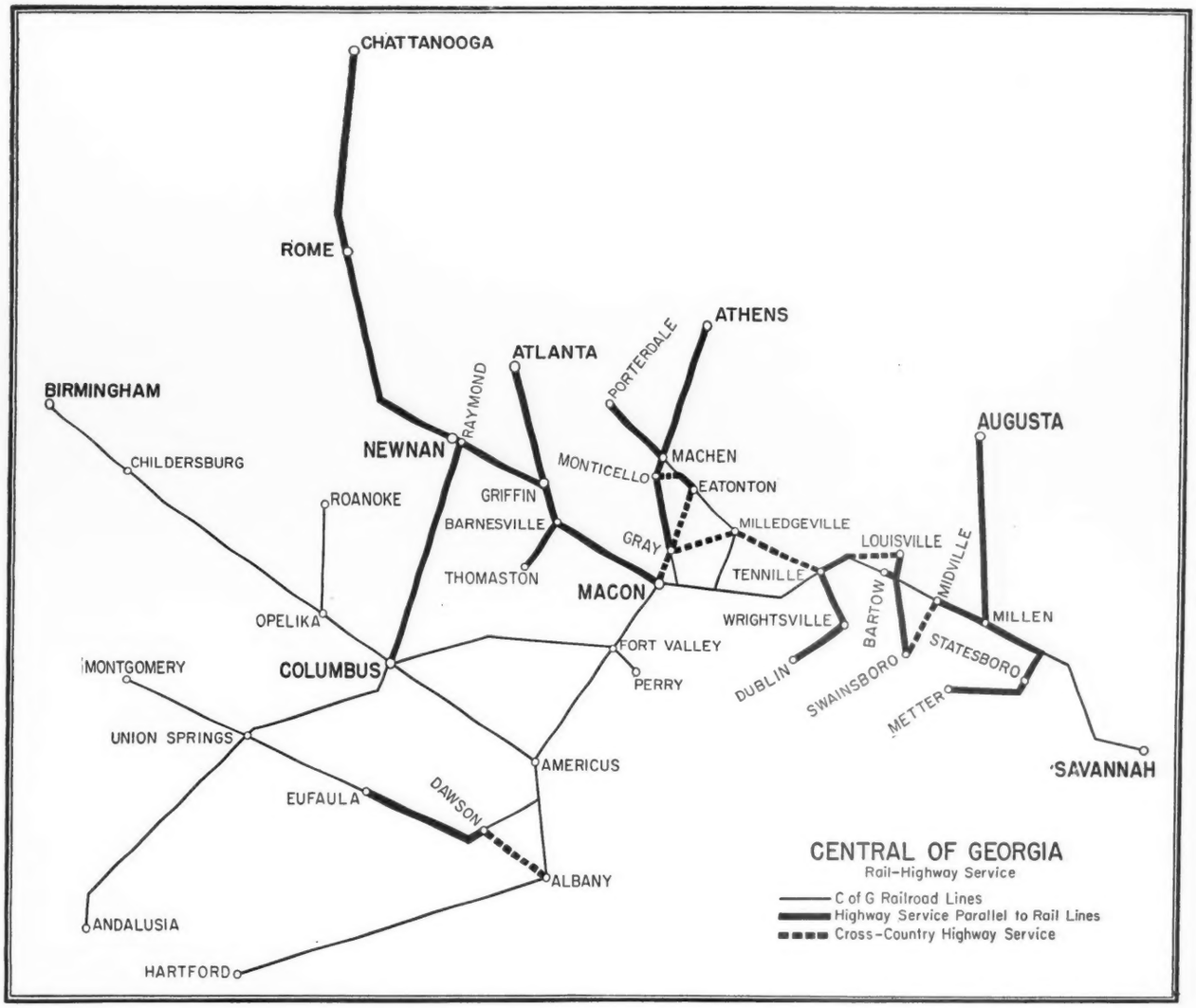
With the installation of rail-highway service, the Central of Georgia has speeded collection and delivery to and from a large number of stations in Georgia. In addition, a material saving in car-days has resulted. During the course of a year's operations, a station-by-station check indicated that the highway trucks saved the use of 7,138 freight cars, and, based on an average detention of 2.98 days per car, this means a saving of 21,271 car-days or a total in per diem payments of $37,234 during the twelve months in question.

The Central of Georgia Motor Transport Company is one of the oldest highway operations in the Southeast, having been chartered in 1927. Operations with one truck were begun in that year under the supervision of the railway's division superintendent, but after approximately 18 months' operation the route was abandoned. On January 1, 1951, however, following a study of coordinated operations on 11 other railways in various parts of the country, the present service was begun. It is in charge of an experienced motor truck operator and the results have warranted a continued growth in the number of routes and, of course, in the number of stations served.

Another result of the new service has been the centralization of freight transfer work at Macon, Ga., for the eastern portion of the railway and the scheduling of a much larger number of package cars to and from that point, which hitherto went to scattered stations on the railway, at the cost of additional train-miles, as well as additional transfer work. Since the elimination of package cars to several other points on the CofG, these package cars to Macon are considerably heavier loaded than was formerly the case.

Regularly scheduled package cars are now in operation between Macon and Cedar Hill, Conn.; Cincinnati; Chicago; Columbia, S. C.; East St. Louis; Florence Transfer, S. C.; Greenwood, S. C.; Jacksonville; Jersey City, N. J.; Nashville, Tenn.; Moultrie, Ga.; Panama City, Fla.; Springfield, Ohio; Trenton, N. J.; and Waycross, Ga. Also package cars are being loaded to break bulk with Atlanta Joint Terminals, Atlanta; Macon, Dublin and Savannah, at Macon, Ga.; Southern, at Atlanta, Ga.

Columbus, Ga., is connected by a railroad truck route with the Greenville district and the Chattanooga district of the Columbus division. Freight from this territory is concentrated at Columbus and distributed into regularly established package cars for Los Angeles; Houston; New Orleans; Mobile, Ala.; Springfield, Mo.; Memphis; St. Louis; Chicago; North Platte, Neb.; Pine Bluff, Ark.; Cincinnati; Philadelphia; Cedar Hill, Conn.; Greenwood, S. C.; Jacksonville; Waycross, Ga.; Spring-



field, Ohio; and Montgomery, Ala., for the Louisville & Nashville.

A Growing Operation

At present, the CofG highway fleet consists of 15 tractors and 21 trailers. The headquarters of the wholly owned subsidiary, the Central of Georgia Motor Transport Company, are in Macon, a central point on the railway from which main lines and branches fan out in six directions. The Interstate Commerce Commission provision of key points, through which freight may not be handled by truck to stations beyond, has, of course, dictated the choice of routes to a certain extent. The routes are divided into two groups, the Cedartown section and the Macon section. Small repair facilities have been established at Cedartown, with the main service facilities at Macon. The two sections handle approximately an equal amount of traffic; for the first three months of this year 4,937,383 lb. of freight were handled by the trucks centering at Macon and 4,891,132 by those operating out of Cedartown.

Since the inception of the operation, the routes have been steadily increased and additional routes are under consideration. Recent additions have been on the Augusta and Metter branches, operating out of Millen. One truck route operates out of Macon to serve four important small cities in a semicircle of approximately 100 miles. These trucks leave Macon and proceed to Milledgeville, which is on a branch line. From there, they go cross-country to Tennille, on the CofG main line. They then cover the line of the Wrightsville & Tennille, a CofG subsidiary railway, serving Wrightsville and Dublin on that line.

The Porterdale branch is served by a truck which also serves the Macon-Athens line between Macon and Machen. This line parallels the railway closely all the way and serves 14 stations en route. The Macon-Athens truck route goes cross-country to serve Eatonton, on a branch line, then follows the Macon-Athens line closely to Athens, serving a total of 11 stations. The Macon-Thomaston route follows the main line to Barnesville and then parellels the Thomaston branch, serving a total of 13 stations. From a passenger standpoint, the Thomaston branch is served by the only bus line operated by the CofG Motor Transport Company, between Barnesville and Thomaston.

To complete the rail-highway coverage of local stations on the main line between Atlanta and Macon, a truck route is operated between Atlanta and Barnesville, closely paralleling the main line all the way. This route serves 18 stations, among them East Point and Griffin, from and

Service to local stations has been improved through rail-highway coordination.

Cedartown, Ga., is one of the transfer points between car and truck.

to each of which nearly two million pounds of freight is handled by truck annually.

The Cedartown section consists of three truck routes, two of which cover the main line between Chattanooga, Tenn., and Griffin, Ga., while the other covers a portion of the Atlanta-Columbus main line. One route follows the main line as closely as possible between Chattanooga and Cedartown, serving nine stations, four of which produce more than a million pounds of freight annually. Another route follows the main line closely between Cedartown and Griffin, serving 13 stations, three of which produce more than a million pounds of freight for the truck subsidiary annually. The truck route on the Columbus main line follows this line closely between Newman and Fortson, serving seven stations en route.

The other truck route operates between Albany, Ga., and Eufaula, Ala., just across the state line. This route handles express only.

All of the truck drivers have keys to the station warehouses so they may load or unload freight during the night when the station forces are not present. It has been found that the drivers are extremely active solicitors for l.c.l. freight in the towns through which they operate.

The success of the initial routes established by the CofG, and the enthusiastic reception of the new and improved service by the shippers affected, have convinced the management of the railway that the rail-highway coordinated service should be extended.

The CofG has found that rail-highway service saves car days

1	1,200-hp. switching locomotive (Baldwin-Lima-Hamilton Corporation)	117,121
1	1,200-hp. switching locomotive (Baldwin-Lima-Hamilton)	104,153
4	1,000-hp. switching locomtives (American Locomotive-General Electric Companies)	103,972
10	dome-coach-buffet passenger cars (Pullman-Standard Car Manufacturing Company)	308,827

The certificates, to be dated September 1, would mature in 30 semiannual installments of $133,000 each, beginning March 1, 1953. They would be sold by competitive bidding, with the interest rate to be set by such bids.

Division 4 of the I.C.C. has **authorized:**

LIGONIER VALLEY.—To issue $50,000 of unsecured 4 per cent promissory notes, proceeds from which will be used to construct two 20-car sidings and a cross-over track at Latrobe, Pa. When construction is completed the LV will turn over the new trackage to the Pennsylvania. This is part of the transaction in which the PRR is acquiring 3.5 miles of LV trackage, between Latrobe and Kingston, for $150,000. The I.C.C. already has authorized abandonment of the remainder of LV trackage *(Railway Age,* July 7, page 161).

NEW YORK CENTRAL.—To assume liability for $8,475,000 of equipment trust certificates, to finance in part 64 diesel-electric locomotive units and 56 freight cars. Estimated total cost of the equipment is $11,363,380 *(Railway Age,* July 7, page 16). Division 4 approved sale of the certificates for 99.38267 with interest at 3¼ per cent—the bid of Halsey, Stuart & Co. and 11 associates—which will make the average annual cost of the proceeds approximately 3.37 per cent. The certificates, dated August 15, will mature in 15 annual installments of $565,000 each, beginning August 15, 1953. They were reoffered to the public at prices yielding from 2.25 to 3.40 per cent, according to maturity.

RAILWAY OFFICERS

EXECUTIVE

As reported in *Railway Age* June 16, **Thomas R. Fitzpatrick** has been appointed assistant vice-president of the PITTSBURGH & LAKE ERIE (NEW YORK CENTRAL subsidiary). Mr. Fitzpatrick was born at Sharpsburg, Pa., on July 24, 1894, and entered railroad service on October 21, 1909, as a stenographer in the freight traffic department of the P&LE at Pittsburgh. He subsequently held various stenographic and clerical positions and was appointed assistant general freight agent in December 1923, general coal freight agent in September 1927, coal traffic manager in October 1929, and freight traffic manager in April 1934. In October 1940 Mr. Fitzpatrick was appointed also freight traffic manager of the NYC.

Felix S. Hales, who has been appointed executive vice-president of the NEW YORK, CHICAGO & ST. LOUIS, as noted in *Railway Age,* July 21, pages 8 and 57, was born in Wilson, N. C., April 13, 1893. He received a B.E. degree from North Carolina State College in 1913, and a C.E. degree from Cornell in 1916. From 1913 to 1914 he was an instructor in mathematics at North Carolina State College. He joined the Nickel Plate in 1916 as a draftsman in the grade elimination department and served in that capacity until June 1918, when he was commissioned a second lieutenant in the Field Artillery, U. S. Army. He returned to the Nickel Plate in December of the same year, and successively became assistant to corporate chief engineer, assistant engineer of bridge design and steel inspection, and engineer of track. Between 1928 and 1931 he was assigned to engineering duties in connection with development of the Cleveland Union Terminal and construction of tracks into the terminal. Later he served as bridge engineer, assistant general superintendent, and assistant to the president. On November 15, 1947, he was appointed vice-president—operation, the position he held at the time of his recent appointment as executive vice-president.

J. C. Wallace, whose appointment as vice-president—operation of the NEW YORK, CHICAGO & ST. LOUIS was noted in *Railway Age* July 21, was born in Harrisburg, Pa., November 1, 1886. He entered railroad service as a structural draftsman for the Milwaukee in April 1914, and in 1918 became engineer of structures for the Lake Erie & Western,

J. C. Wallace

later consolidated with the Nickel Plate. He served successively as engineer of the LE&W district of the NKP at Indianapolis; assistant chief engineer of the LE&W and NKP districts, at Cleveland; assistant chief engineer for the NKP system; assistant general superintendent; and chief engineer. He was appointed general manager on November 1, 1948, the position he held at the time of his recent appointment.

Arthur G. Plante, director of public relations of the NEW YORK, NEW HAVEN & HARTFORD, has been appointed assistant vice-president in charge of public relations, publicity and advertising, with headquarters as before at Boston.

H. E. Roll has been appointed president and general manager of the UNION TERMINAL, St. Joseph, Mo., succeeding **R. E. Hastings,** who has retired. Mr. Roll likewise succeeds Mr. Hastings as general manager of the ST. JOSEPH BELT, continuing also as a vice-president. Both roads are Missouri Pacific subsidiaries. Mr. Roll has also been appointed executive general agent of the MP, in which capacity he will be the official representative of the MP in St. Joseph.

OPERATING

William Scheibler has been appointed superintendent of the Providence division of the NEW YORK, NEW HAVEN & HARTFORD, succeeding **H. F. Donnelly.**

William G. White, general superintendent of the DELAWARE, LACKAWANNA & WESTERN, has been appointed general manager, with headquarters as before at New York. The office of vice-president of operations, which **Perry M. Shoemaker** vacated when he assumed the presidency of the Lackawanna on August 1 (*Railway Age,* July 7, page 17), has been abolished. **John A. Craddock,** superintendent of the Buffalo division, has been transferred to the Morris and Essex division at Hoboken, N.J., succeeding **Fred Diegtel,** who has been appointed general superintendent at New York. **John E. Mahoney,** assistant trainmaster of the Morris and Essex division, at Hoboken, has been named superintendent of transportation at New York, succeeding **Robert W. Jones,** who has been named superintendent at Buffalo. A photograph and biography of Mr. Jones were published in *Railway Age* February 18, page 66.

Mr. White was born at San Francisco on April 7, 1913, and attended the University of California and George Washington University (B.S. in C.E.). He entered railroad service in 1929 with the Yosemite Valley at Merced, Cal., and served during summer vacations until 1934 as section laborer, machinist's helper, station agent and

William G. White

bridgeman. Mr. White joined the Lackawanna in June 1935 as yard clerk and student at Hoboken, advancing to supervisor of freight claim prevention at Scranton, Pa., in June 1937. Assigned to special duty on January 1, 1941, he was appointed freight trainmaster at Port Morris, N.J., on March 1, 1942, and five months later became train-

master at Buffalo. He was appointed superintendent there on May 1, 1943, and became general superintendent at New York on January 1, 1949.

C. C. Madison, assistant superintendent of the CHESAPEAKE & OHIO at Hinton, W. Va., has been appointed acting asistant superintendent at Peach at Richmond, Va., has been appointed Creek, W. Va. **F. G. Cobb,** trainmaster acting assistant superintendent at Hinton, succeeding Mr. Madison. **C. H. Manning,** assistant trainmaster at Gauley, W. Va., has been appointed acting trainmaster of the Peninsula subdivision at Richmond, including jurisdiction over Main Street station, succeeding Mr. Cobb.

J. F. O'Connell, trainmaster of the NEW YORK CENTRAL at Rochester, N.Y., has been appointed assistant superintendent of the Syracuse-Rochester division at Syracuse, N.Y. **W. J. Barnes** has been appointed trainmaster of that division.

J. M. Sweeney, supervisor of transportation of the RAILWAY EXPRESS AGENCY, has been promoted to superintendent of transportation at Chicago. Mr. Sweeney, who has been with the express organization since 1921, held a number of minor positions prior to his appointment as assistant chief clerk in 1947. He has been supervisor of transportation since 1948.

TRAFFIC

W. C. Douglas, Jr., has been appointed general agent of the LEHIGH & HUDSON RIVER, in Chicago.

Raymond H. Bather, assistant general freight agent of the ST. LOUIS-SAN FRANCISCO at St. Louis, has been promoted to general freight agent. **L. V. Rammes,** chief divisions clerk, succeeds Mr. Bather. **George W. Meichel** and **Joseph J. Seidel,** divisions clerks, have been promoted to assistant general freight agents.

James W. O'Hara, division passenger agent of the ERIE at Elmira, N.Y., has retired after 48 years of railroading. **Gerald Saunders,** division passenger agent at Youngstown, Ohio, succeeds Mr. O'Hara, with headquarters at Elmira and Binghamton. **William L. Schorr,** city passenger agent at Chicago, has been appointed division passenger agent at Youngstown, succeeding Mr. Saunders.

Alfred J. Ball, foreign freight traffic manager of the PENNSYLVANIA at Philadelphia, retired on July 31, after almost 52 years of service with the road.

M. E. Daniels, Jr., freight agent of the LOUISVILLE & NASHVILLE at Mt. Vernon, Ind., has been appointed freight agent at Mt. Vernon, Ill. He succeeds **W. F. Clark,** transferred to Hopkinsville, Ky., to replace **H. G. Andress,** transferred to Evansville, Ind.

Harry J. McCarthy, district traffic manager of the KANSAS CITY SOUTHERN at Chicago, has been transferred to New York, where he succeeds **C. P. Hoch,** whose retirement was reported in *Railway Age* July 28. **Frank D. Tracy** succeeds Mr. McCarthy at Chicago. **Raymond M. Lincoln** has been appointed general agent at Milwaukee.

MECHANICAL

As *Railway Age* reported on July 14, **H. E. Brakke** has been appointed mechanical engineer of the NORTHERN PACIFIC at St. Paul. Following his graduation from the University of Minnesota in 1931, Mr. Brakke joined the NP as a special apprentice. During World War II he served as an officer in the U. S. Army, returning to the NP in 1946 as draftsman in the mechanical engineer's office at St. Paul. Mr. Brakke subsequently held the position of assistant to general car foreman at Brainerd, Minn., and in March of this year was appointed assistant to mechanical engineer.

Kenneth Cartwright, general mechanical superintendent of the NEW YORK, NEW HAVEN & HARTFORD, has been appointed consulting engineer, with headquarters as before at New Haven. **William J. Harlow,** assistant general mechanical superintendent, has been appointed general mechanical superintendent. Mr. Cartwright was born at West Epping, N. H., and was graduated from Massachusetts Institute of

Kenneth Cartwright

Technology in 1912. He joined the New Haven as material inspector in June 1914. After service during World War I as a lieutenant in the Navy, Mr. Cartwright returned to the New Haven in 1920 as assistant to engineer of tests, becoming general mechanical inspector in 1923, assistant mechanical engineer in June 1925, mechanical engineer in September 1935, chief mechanical engineer in April 1944, and general mechanical superintendent in April 1951.

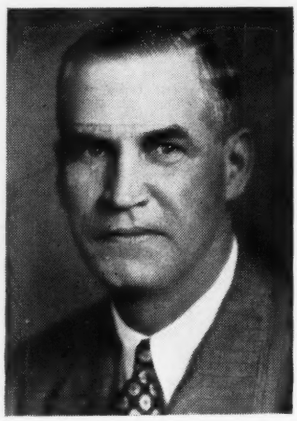
PURCHASES & STORES

William O. Prather, chief inspector, forest products bureau, of the ILLINOIS CENTRAL, has been appointed manager, forest products bureau, with headquarters at Memphis. His former position has been abolished.

ENGINEERING AND SIGNALING

Arthur B. Hillman, assistant chief engineer of the CHICAGO & WESTERN INDIANA and the BELT OF CHICAGO, at Chicago, has been promoted to chief engineer at that point, succeeding **Victor R. Walling,** who has retired.

Mr. Hillman graduated from the University of Illinois in 1914, some five years after entering railway service with the Lake Shore & Michigan



Arthur B. Hillman

Southern (New York Central). In 1910 he joined the C&WI as a rodman, advanced through positions of levelman and transitman, and in 1916 was appointed assistant engineer, maintenance, with the Belt of Chicago. Following service as an Army officer in World War I, Mr. Hillman returned in 1919 as assistant engineer of the Belt, serving later as roadmaster, assistant trainmaster and assistant engineer, maintenance. In 1930 he was appointed roadmaster with jurisdiction over the bridge and building department and in 1937 became assistant engineer in charge of reconstruction of Clearing yard.

Mr. Hillman was further advanced in 1940 to engineer, maintenance of way, of both the Belt and C&WI, and in 1948 was appointed assistant chief engineer of both roads.

Mr. Walling received his education at Kansas University. He entered railroad service in 1901 with the Cananea Consolidated Copper Company's Railway in Mexico, subsequently serving as instrumentman with the Southern Pacific. Mr. Walling held various positions with Cananea Consolidated until 1912, when he joined the C&WI as assistant engineer at Chicago. In 1915 he was appointed principal assistant engineer in charge of construction, track eleva-

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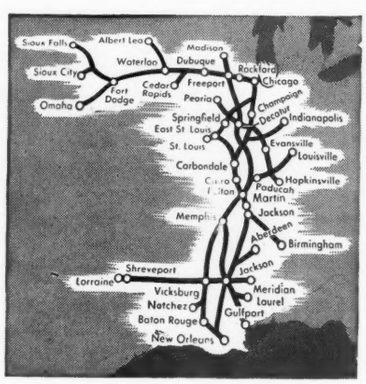

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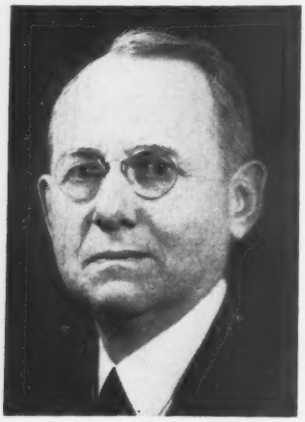
tion and maintenance, and in 1933 was promoted to engineer maintenance of way for the C&WI and the Belt. From 1940 to 1944 he served as superintendent of the C&WI, advancing in the



Victor R. Walling

latter year to assistant chief engineer of the two roads. Mr. Walling was further promoted to chief engineer of both roads in 1948.

E. J. Napier, assistant bridge engineer of the Central region, CANADIAN NATIONAL, at Toronto, has been appointed bridge engineer of the same region, succeeding **J. C. King,** promoted.

Jack O. Holloday, draftsman in the special engineer's office of the LOUISVILLE & NASHVILLE, Louisville, Ky., has been promoted to assistant engineer of the Louisville division, succeeding **Conrad W. Hale,** who has been transferred to the chief engineer's bridge department at Louisville. **G. W. Potts,** draftsman, has been appointed resident engineer at Madisonville, Ky.

H. C. Archibald, assistant to chief engineer of the BOSTON & MAINE, has been promoted to assistant chief engineer, with headquarters as before at Boston, to succeed **C. S. Robinson,** who has retired. **F. R. Spofford,** assistant division engineer at Dover, N.H., has been promoted to assistant to chief engineer at Boston, to succeed Mr. Archibald.

Mr. Robinson was born at Portland, Me., on April 10, 1887, and attended the University of Maine (1911). He entered railroad service on July 1, 1909, as rodman on the Maine Central, becoming assistant engineer in October 1912. After service in the office of the engineer maintenance of way of that road, Mr. Robinson was in the United States Army Engineer Corps during World War I. In December 1918 he returned to the MC as general supervisor maintenance of way, becoming engineer maintenance of way in July 1924. He was appointed assistant engineer maintenance of way of the B&M and MC in January 1936, and in July 1937 became assistant chief engineer of both roads.

(Continued from page 15)

long, will be converted into an open cut by removal of quake-loosened earth. Some 200 feet of a third tunnel will be similarly "daylighted." The longest tunnel to suffer severe damage (1,170 feet) will be cleared of debris and relined. Two others must have lining repairs; and kinked and twisted track must be relaid, and fills and slides built up or bulldozed away and stabilized.

Most of the damage to SP property was confined to about 3½ miles of track in the most spectacular portion of the climb from the San Joaquin valley to Tehachapi summit. No employees or passengers were injured by the quake.

E.-M. D. Cuts Labor Charge On Rebuilds Up to 30 P.C.

Major cuts in labor charges on rebuilding of principal components of diesel locomotives in the six factory rebuild plants of the Electro-Motive Division of General Motors Corporation were made effective on August 4. N. C. Dezendorf, vice-president of G.M. and general manager of the division, said that all of the firm's diesel locomotive customers have been formally advised that labor charge upon strip and rewind of traction motor armatures is reduced by 30 per cent, and that labor charges upon all other catalog listed rebuilding operations are reduced 10 per cent. The traction motor armature rewind job constituted the largest single item in the business of the factory branches.

The reductions are the direct result of technological advances which have drastically reduced costs, Mr. Dezendorf explained. He pointed out that, since E.-M.D. went into the business of rebuilding traction motors, generators, engines and other major components of locomotives for the railroads shortly after the close of World War II the average hourly wage rates at factory branches have gone up 59 per cent. "We not only have been able to completely offset this inflationary influence but now are able to announce these drastic reductions," Mr. Dezendorf said. "This is largely due to a program of complete retooling of the factory branches started two years ago and now almost completed. The program has converted these plants from job shops into true production shops where the same high production methods and machinery used in the original manufacturing operations at the main locomotive plants are duplicated."

In the normal operation of diesel locomotives certain of the major components reach a point, ranging from every year and a half to 12 years of their life, in which they need to be completely torn down and rebuilt. E.-M.D. explains that the rebuilding operations which it holds itself out to perform for the railroads are not to be confused with the regular repair and maintenance work on diesel locomotives which all carriers continue to do—as they have upon steam locomotives.

E.-M.D. now operates plants for rebuilding operations at La Grange, Ill., Baltimore, Jacksonville, Los Angeles, Oakland, and St. Louis. Land has been purchased for an additional plant at Salt Lake City.

I.C.C. Will Hear Ogden Gateway Case Re-Argued

The so-called Ogden Gateway case will be re-argued before the Interstate Commerce Commission. A July 29 notice from the commission announced that re-argument will be held, but no date was set.

Purpose of this further argument is to permit Commissioners Elliott and Arpaia, who recently joined the commission, to participate in the proceeding. The case was first argued in October 1951. Commissioners Aitchison and Rogers, who participated at that time, have since retired.

The "gateway" case is docketed as No. 30297. It involves a complaint by the Denver & Rio Grande Western, asking the I.C.C. to require the Union Pacific to participate in joint through rates via the Ogden, Utah, gateway on traffic between Colorado common points and points east thereof, and points in Utah, Idaho, Montana, Oregon and Washington. The D&RGW complaint was filed in August 1949.

Chief Examiner Frank E. Mullen of the commission recommended in a 1950 proposed report that the I.C.C. force open the gateway (*Railway Age*, November 25, 1950, page 50).

Railroaders at Stanford Executives Program

Stanford University in California is providing a nine-weeks course for mature business leaders, under the designation: "Executive Development Program." The program began June 23 and terminates August 22—affording eight weeks of class work, with one week (July 21-25) being devoted to attendance at the university's regular summer conference of business executives.

From the positions of those attending and the character of the studies cataloged, it would appear that this Stanford program aims at providing much

(Continued on page 102)

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Santa Fe System Lines
Chicago, Illinois

(Continued from page 96)

the same kind of educational background for mature business executives as the "Advanced Management Program" at the Harvard Business School (see article entitled "Giving a Supercharge of 'Know-How' to Rising Managers" in *Railway Age*, April 9, 1951, page 38).

Among the subjects included in the eight week's course are: Managerial Accounting, Statistical Controls and Forecasting; Management of Distribution; Management of Operations; External Relations; Financial Administration; Employee Relations; Personnel Relations; and Top Management. Objectives of the program are given as follows:

1. To develop a top management perspective, an aptitude for considering problems from the viewpoint of the company as a whole.
2. To develop an acquaintance with and appreciation of other departmental functions, a breadth of vision beyond the scope of the executive's own area of activity.
3. To develop increased competence in the individual's own field of specialization.
4. To develop added proficiency in use of basic management techniques.

The director of the program is Professor Paul E. Holden, who may be addressed in care of the Graduate School of Business at Stanford University, California. The charge for the nine-weeks program is given at $1,300, including both tuition and living expenses. The teaching staff are mainly from Stanford, but two are from other universities and one is from industry (Standard Oil of California).

There are 37 business executives enrolled for the initial program—most are from California, but two are from New York, one is from Canada and several are from Pacific Coast states other than California. Two of the 37 are from railroads—Stanley M. Houston, assistant general superintendent of motive power of the Southern Pacific at San Francisco, and Roy E. Larson, treasurer of the Western Pacific, also from San Francisco.

UP Plans a Freight Claim Agent's "Dream Car"

So that switching crews and others can see at first hand how rough handling can affect lading, the Union Pacific is now progressing through the blueprint stage a transparent box car. It will be assigned to freight claim prevention work throughout the system when it emerges from the Omaha shops sometime before the end of the summer.

The car will be unique in the claim prevention field. It will have one entire side fitted with Plexiglas—a transparent plastic—and, so that it can be used by night as well as by day, will have a self-contained power plant to operate electric lights set in shockproof sockets in the ceiling. To give yard crews a better picture of actual

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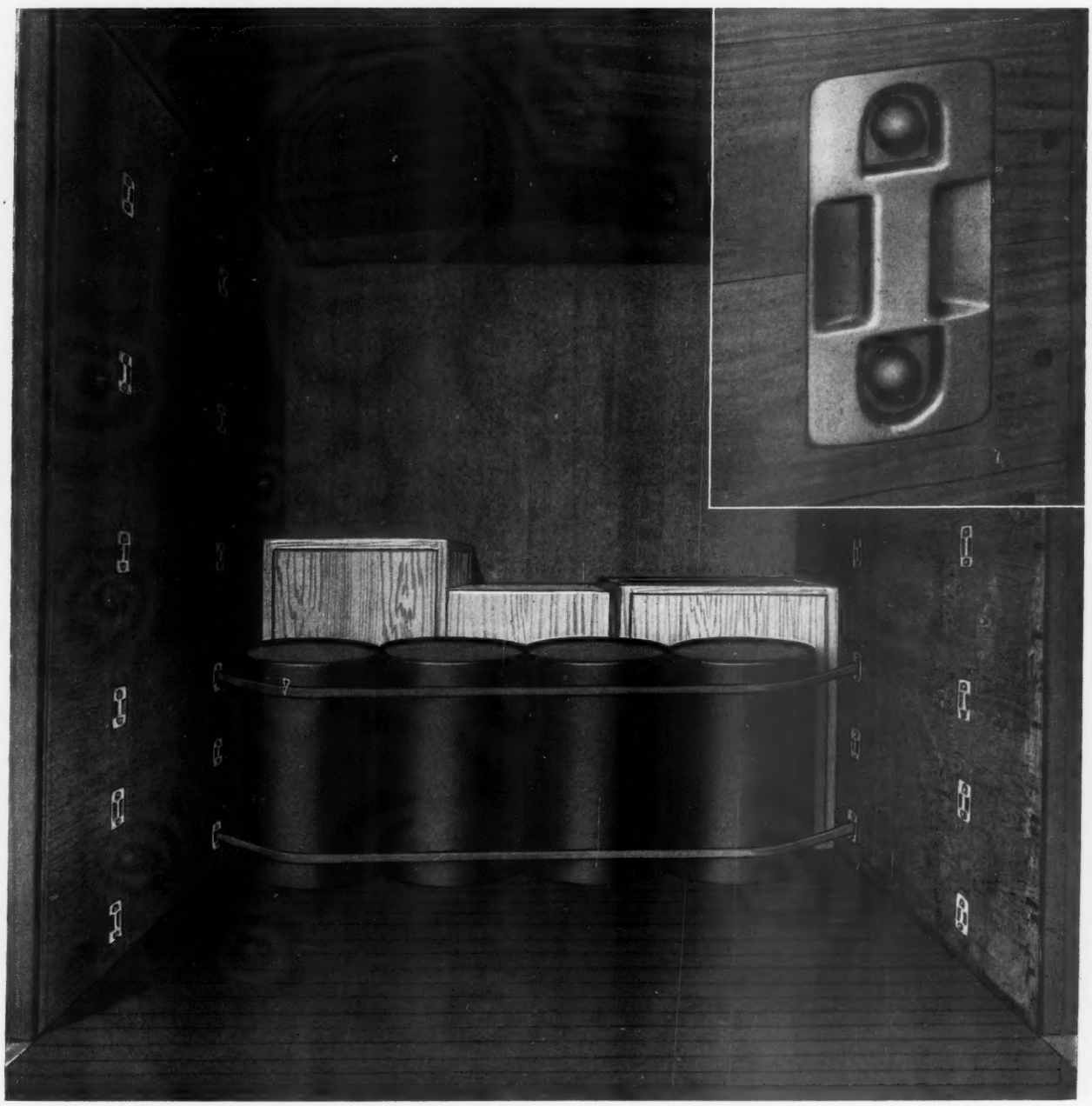

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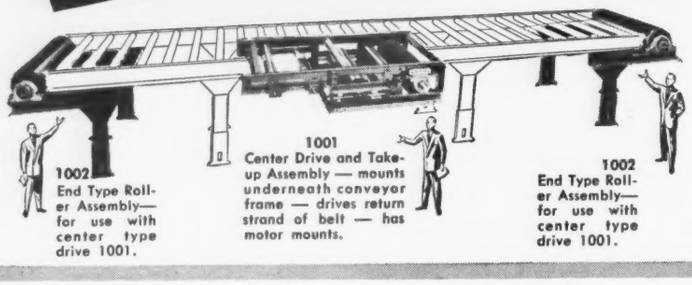
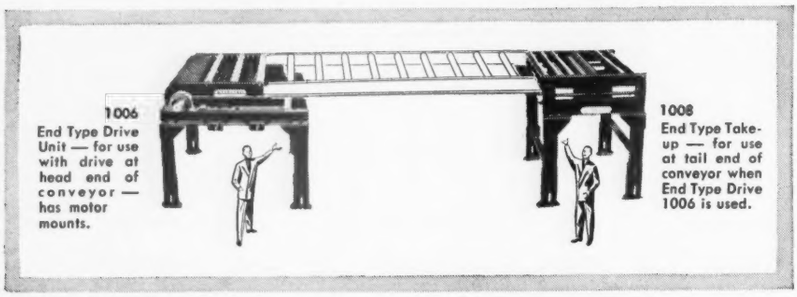

1002
End Type Roller Assembly—for use with center type drive 1001.
1001
Center Drive and Take-up Assembly — mounts underneath conveyor frame — drives return strand of belt — has motor mounts.
1002
End Type Roller Assembly—for use with center type drive 1001.

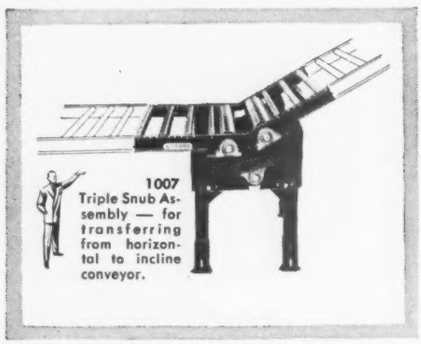
HANDIDRIVE 1001-1002 PRE-BUILT CONVEYOR UNITS

This Center Drive and Takeup Assembly drives return strand of belt—mounts underneath conveyor frame — can be used to convert present gravity conveyors to live, or powered, belt or roller conveyor or to make additions or changes to existing power conveyors. Unit 1002 is End Type Roller Assembly for use with 1001 Center Drive Assembly.


1006
End Type Drive Unit — for use with drive at head end of conveyor — has motor mounts.
1008
End Type Take-up — for use at tail end of conveyor when End Type Drive 1006 is used.

HANDIDRIVE 1006-1008 PRE-BUILT CONVEYOR UNITS

1006 is an End Type Drive Unit for use with drive at head end of conveyor. 1008 is an End Type Take-up for use at tail end of conveyor when End Type Drive 1006 is used. These two stock units make it an easy and simple matter to put together a complete power conveyor line.



HANDIDRIVE 1007 PRE-BUILT CONVEYOR UNIT

This is a Triple Snub Assembly Unit for placing in a conveyor line for transferring flow of commodities from horizontal to incline. Another of Standard's stock units that provide flexibility of planning and arrangement in making your own custom-built conveyors.

Send today for HANDIDRIVE 1000 Series and complete information. Conveyor-engineering service is offered without obligation. Series "400" and "700" units also available for lighter load applications. Write Dept. RA-82.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minnesota
Sales and Service in Principal Cities

Send for special bulletin HANDIDRIVE 1000 Series and Bulletin 638 describing Standard Gravity and Power Conveyor Units.

switching speeds, a huge speedometer—with a dial three feet in diameter—will be mounted on the transparent side. Plans also call for six hatches in the otherwise standard metal roof so that the damaging effects of rough handling may be observed from above.

Because Plexiglas is easily scratched—which could eventually spoil the transparency of the "show window" side—a metallic network will keep the lading from contacting it and plywood panels will cover the outside while the car is in transit.

The car will not only be used as a classroom for operating employees, but will serve also as a laboratory to check efficiency of loading and bracing methods now used for an assortment of commodities. Operation of the car will be under supervision of General Claims Agent C. J. Wullstein.

Retirement Beneficiaries Reach Half Million Mark

The monthly benefit rolls of the retirement-survivor benefit system reached the 500,000-person mark in June, according to a recent statement issued by the Railroad Retirement Board. The figure was some 90,000 above that of a year ago. During the same period, benefit payments, including lump sums, rose from $27 million a month to $37 million, the board said.

The increases, the board pointed out, were due largely to 1951 amendments to the retirement act, under which both retirement and survivor annuities were raised substantially and provision was made for paying benefits to wives of retired employees. Wives alone accounted for 85 per cent of the increase in beneficiaries.

Amortization Certificates

Certificates of necessity for accelerated tax amortization of facilities were granted to 45 railroads during the period from June 13 through July 2, the Defense Production Administration has announced.

The Southern Pacific was granted certificates totaling $29,920,493, and was authorized to write off 55 per cent of this amount in five years. The road also was authorized to write off 40 per cent of additional facilities costing $190,665.

Other certificates went to roads listed below. The percentage figure in each case indicates the amount that can be written off in five years.

Alabama Great Southern, $689,515—40 per cent.

Aliquippa & Southern, $32,687—40 per cent.

Atlantic Coast Line, $1,420,809—55 per cent.

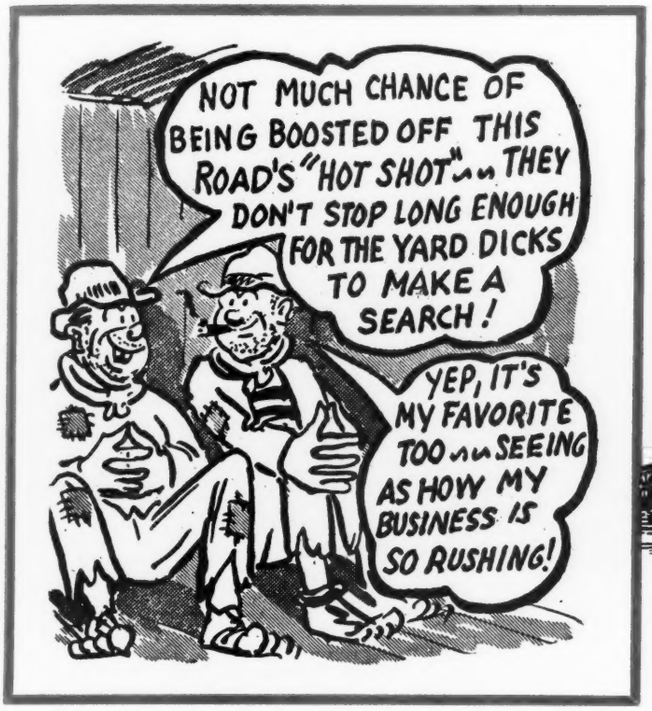
Central of Georgia, $2,950,123—55 per cent.

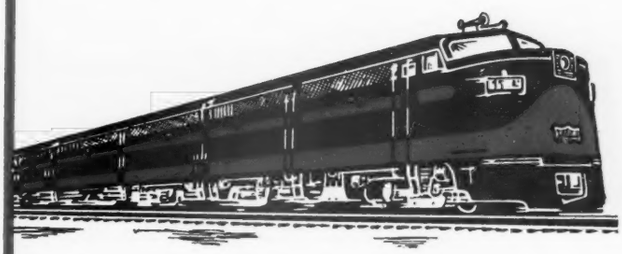
Central Pacific, $168,100—40 per cent.

Central of New Jersey, $1,431,412—60 per cent.

Central of Pennsylvania, $1,136,497—55 per cent.

Chesapeake & Ohio, $5,781,641—40 per


NOT MUCH CHANCE OF BEING BOOSTED OFF THIS ROAD'S "HOT SHOT"... THEY DON'T STOP LONG ENOUGH FOR THE YARD DICKS TO MAKE A SEARCH!
YEP, IT'S MY FAVORITE TOO... SEEING AS HOW MY BUSINESS IS SO RUSHING!



SERVICE THAT REALLY SERVES!

- Fast schedules
- Ample motive power
- Impact recorder tested
- Automatic tracing
- No congestion
- Short mileage
- By-passes Large Terminals

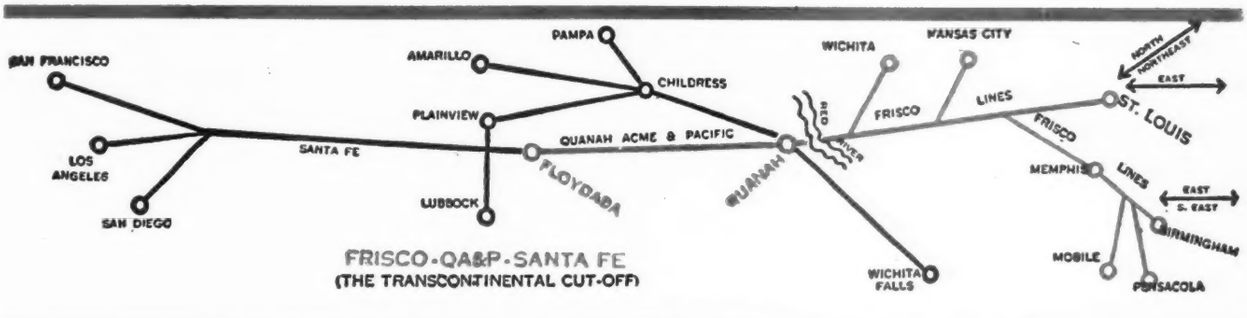
Your patronage is constantly solicited
and always appreciated.

QUANAH, ACME & PACIFIC RAILWAY COMPANY

W. L. Richardson, Executive Vice President

QUANAH, TEXAS

Between East and West Q. A. & P. is Best!



A pair of electrics haul transcontinental freight No. 263 through the Belt Mountains

Mountain climbing the Milwaukee way

Put yourself out here in rugged Montana Canyon. Imagine you're a shepherd instead of a shipper.

Watch how silently and effortlessly this string of cars moves up Eagle Nest grade behind a team of electric locomotives. Up grade or down, stopping or starting, there's no jolt or jar . . . or damaged freight.

If you could watch the whole operation from the Great Lakes to Puget Sound, you'd see that The Milwaukee Road always has the right power in the right place.

Yes, that's the pattern all over the Milwaukee . . . the right car for the right cargo, the right man for the right job.

Let us prove ourselves the right railroad for you. Contact your nearest Milwaukee Road agent.

SHIP—TRAVEL

Look at the map!

THE MILWAUKEE ROAD

Route of the HIAWATHAS

CHICAGO, MILWAUKEE, ST. PAUL AND PACIFIC RAILROAD

cent; $1,967,900—50 per cent; and $11,365,000—55 per cent.

Chicago & Eastern Illinois, $562,500—70 per cent.

Chicago & North Western, $8,643,849—55 per cent; and $4,409,000—70 per cent.

Chicago, Milwaukee, St. Paul & Pacific, $85,745—50 per cent.

Denver & Rio Grande Western, $10,814,754—70 per cent; and $3,574,594—40 per cent.

Duluth, South Shore & Atlantic, $251,276—50 per cent; and $508,077—40 per cent.

Elgin, Joliet & Eastern, $3,186,073—40 per cent.

Great Northern, $8,157,500—55 per cent; and $82,760—40 per cent.

Gulf, Mobile & Ohio, $1,151,382—70 per cent; and $475,401—55 per cent.

Illinois Central, $256,959—40 per cent.

Lake Superior & Ishpeming, $490,000—40 per cent.

Lake Terminal, $184,000—40 per cent.

Lehigh Valley, $936,586—70 per cent; $44,842—50 per cent; and $53,885—40 per cent.

Louisiana & Arkansas, $574,700—40 per cent.

Louisville & Nashville, $1,420,809—55 per cent.

Minneapolis, St. Paul & Sault Ste. Marie, $1,800,000—70 per cent; and $1,763,948—55 per cent.

Monongahela Connecting, $698,300—40 per cent.

Nashville, Chattanooga & St. Louis, $2,052,000—70 per cent.

New York Central, $19,177,600—55 per cent; and $570,000—40 per cent.

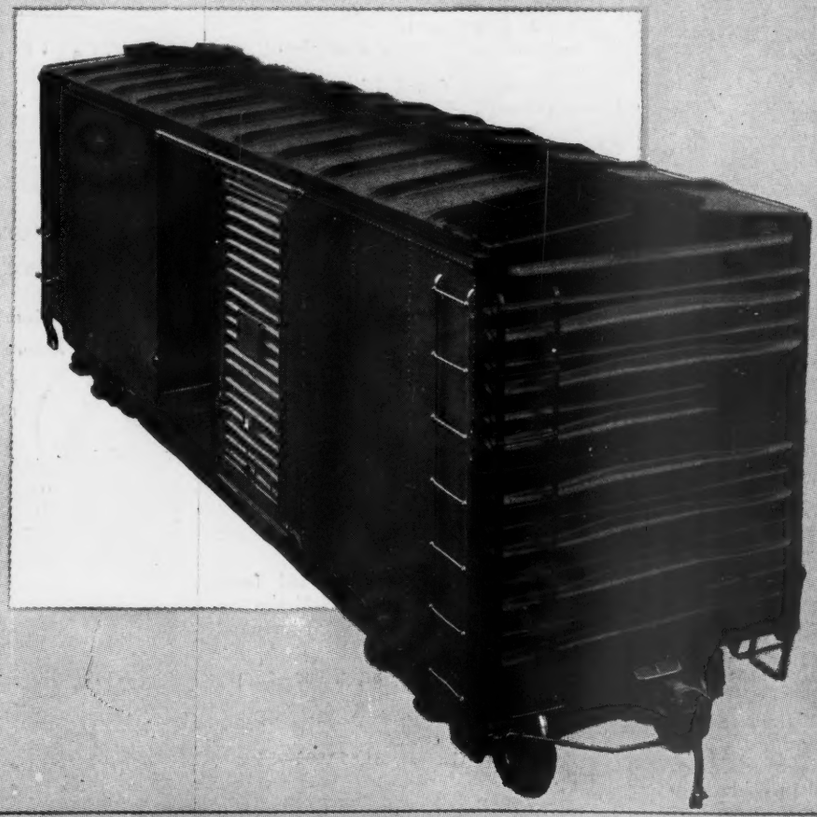
(Continued on page 108)

News Briefs . . .

. . . Dr. Ira Goldowsky, Jersey Central Lines' medical director, has announced that on June 4 some 175 of the road's employees probably became the first persons ever to donate blood to the armed forces through American Red Cross facilities aboard a railroad ferryboat. The road's newest ferry, the "Elizabeth," docked at the foot of Johnston avenue, Jersey City, N. J., was the setting.

. . . The Union Pacific is converting a former steel car shop at Cheyenne, Wyo., into a center for machine-finishing parts for locomotives and cars. Forgings, which the UP has been buying in semi-finished form, will be purchased rough and then semi-finished at the new Cheyenne plant. Initially, the plant will employ about 50 men.

. . . The Pennsylvania's safety campaign in schools is paying big dividends, according to H. W. Quellhorst, PRR superintendent of police. "There has not been a single injury during the first six months of 1952," Mr. Quellhorst said, adding that "twelve children were killed or injured in 1951, six of those accidents coming during the first six months of the year." The campaign is said to have reached more than 220,000 students in the past six months and has included talks by police officers in 606 schools and distribution of 41,000 juvenile safety leaflets.



Improved Dreadnaught Ends:

The rounded corner box section in co-operation with the strongest possible corrugated construction—an approved and accepted design.

Diagonal Panel Roof:

The scientifically proportioned material for increased strength is recognized as a better design for box, refrigerator, covered hopper and all house car roofs.

Metal Floor Protector:

This perforated steel floor covering is used in more cars than any other metal or metal reinforced floor. It is easily applied over the wood decking through the door-way—or to any desired coverage—and more than doubles the floor strength.

Standard

RAILWAY EQUIPMENT MANUFACTURING COMPANY

310 SOUTH MICHIGAN AVENUE, CHICAGO 4 • 247 PARK AVENUE, NEW YORK

HOBART BUILDING, SAN FRANCISCO • FIRST NATIONAL BANK BUILDING, ST. PAUL

SINCE 1892 SPECIALISTS
Bogue
IN FINE MOTORS & GENERATORS
CONTROLLED POWER for CAR LIGHTING and CABOOSE RADIO
FOR CHARGING
12 - 32 - 64 or 110 VOLT
Radio, Car Lighting Batteries
The Modern Bogue Way
WITH
RECTIFIED HIGH FREQUENCY AC
★ For new installations and replacements. The output of the Bogue high frequency alternator is rectified by a Belcon "balanced-wattage" Selenium Rectifier and regulated by a Bogue Magnetic Amplifier. No commutators—No reverse current relays.
BOGUE RAILWAY PRODUCTS:
- Alternator-Rectifier Car Lighting battery charging systems
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- Custom designed Control Panels
- Magnetic Amplifier Voltage and Speed Regulators
- Selenium Rectifiers
- Electronic Communication Systems
- Rotary Converters

BOGUE RAILWAY EQUIPMENT DIVISION
Bogue Electric Manufacturing Co.
PATERSON 3, NEW JERSEY
BOGUE PRECISION POWER

New York, Chicago & St. Louis, $2,057,698—40 per cent.

Norfolk & Western, $3,100,000—70 per cent.

Norfolk Southern, $825,000—55 per cent.

Pennsylvania, $372,274—40 per cent.

Pennsylvania (as lessee of the Pittsburgh, Cincinnati, Chicago & St. Louis), $159,445—50 per cent; and $105,505—40 per cent.

Richmond, Fredericksburg & Potomac, $375,690—40 per cent.

Seaboard Air Line, $1,368,000—70 per cent.

St. Joseph & Grand Island, $1,500,023—40 per cent.

St. Louis-San Francisco, $315,688—50 per cent; and $186,964—40 per cent.

St. Louis Southwestern, $1,948,250—55 per cent; and $227,081—40 per cent.

Southern, $2,990,537—40 per cent.

Tennessee Central, $634,020—55 per cent.

Texas & New Orleans, $140,947—50 per cent; $565,891—40 per cent; and $42,425—70 per cent.

Toledo, Peoria & Western, $550,000—70 per cent.

Union, $26,000—70 per cent; and $233,000—40 per cent.

Union Pacific, $105,000—70 per cent; and $170,459—40 per cent.

Wabash, $87,445—50 per cent; and $259,577—40 per cent.

Western Maryland, $1,462,675—50 per cent.

Western of Alabama, $32,890—40 per cent.

In its report for the period from July 3 through July 10, D.P.A. showed that certificates then approved included those listed below:

Chesapeake & Ohio, $7,249,000—55 per cent.

Nashville, Chattanooga & St. Louis, $1,983,765—40 per cent.

New York Central, $1,850,000—55 per cent.

Manistique & Lake Superior, $81,463—55 per cent.

Northern Pacific, $123,090—40 per cent.

Another recent statement issued by D.P.A. summarized by industries the certificate situation through June 20 of this year. It showed that line-haul railroads, as of that date, had received 727 certificates authorizing fast write-off of 64.3 per cent of $1,689,463,000 spent for new equipment and facilities. Those same roads, as of June 20, had 423 applications pending for accelerated amortization with respect to proposed expenditures of $315,639,000.

Meanwhile, switching and terminal roads had received 41 certificates authorizing fast write-off of 56.5 per cent of $20,223,000. And they had pending two applications involving proposed expenditures of $3,130,000.

D.P.A. has also made a report on the progress toward completion of facilities covered by certificates issued through March 31. This report showed that certificates issued to line-haul railroads through March 31 contemplated acquisition of equipment and facilities costing $2,023,613,000; and that equipment and facilities costing 76 per cent of that amount, or $1,539,538,000, were "in place" on March 31. It was estimated that these figures had risen to 85 per cent and $1,716,336,000, respectively, by June 30.

FOR FAST AND DEPENDABLE SERVICE
ROUTE VIA R. F. & P. RR, Richmond, Virginia
The North-South Gateway
New Diesel Locomotives Assure You of Quick Over-the-Road Operation
RICHMOND, FREDERICKSBURG AND POTOMAC RAILROAD
H. R. Powell
Traffic Manager, Richmond, Va.

GREAT NORTHERN RAILWAY
"YOUR FREIGHT GOES GREAT WHEN IT GOES GREAT NORTHERN"
Serving ten States and two Canadian Provinces between the Mississippi Valley and the Pacific Coast.

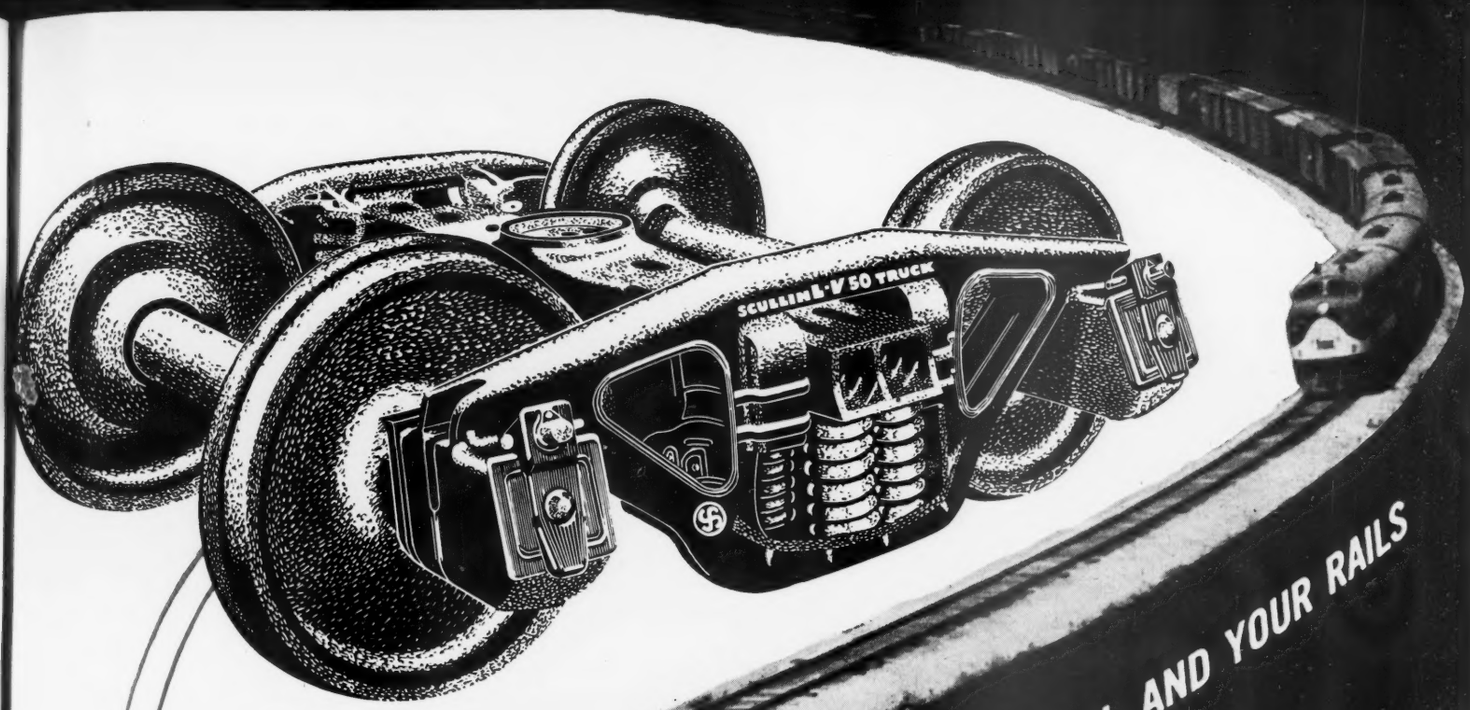

Photo courtesy
Frisco Railway

THE SMOOTHEST TRAFFIC-BUILDERS BETWEEN LCL AND YOUR RAILS

BUILD more profitable fast-freight service around . . .

SCULLIN LATERAL VERTICAL **50** CUSHIONED MOTION **TRUCKS**

STEEL CASTINGS MANUFACTURED

NEW YORK
CHICAGO
BALTIMORE
RICHMOND, VA.

SCULLIN STEEL CO.

SAINT LOUIS 10, MISSOURI

Freight Operating Statistics of Large Railways — Selected Items

Region	Road and Year	Miles of road operated	Train-miles	Locomotive-Miles: Principal and helper	Locomotive-Miles: Light	Car-Miles: Loaded (*thousands*)	Car-Miles: Per cent loaded	Ton-miles (*thousands*): Gross excl.locos & tenders	Ton-miles (*thousands*): Net rev. and non-rev.	Road-locos. on line: Serviceable: Unstored	Road-locos. on line: Serviceable: Stored	Road-locos. on line: B.O.	Road-locos. on line: Per cent B.O.
New Eng. Region	Boston & Maine 1952	1,690	268,924	274,464	10,046	9,703	67.9	621,251	257,447	83	11	11	10.5
	1951	1 691	270,677	277,792	12,026	10,923	70.6	669,806	275,369	87	4	8	8.1
	N. Y.. N. H. & Htfd 1952	1,764	295,163	295,280	19,210	11,526	68.1	719,437	301,201	93	2	7	6.9
	1951	1,766	302,570	302,648	16,805	11,918	69.6	752,033	328,506	90	..	12	11.8
Great Lakes Region	Delaware & Hudson 1952	793	237,988	266,714	16,751	10,399	68.7	733,718	385,210	83	18	46	31.3
	1951	793	248,329	292,113	22,942	11,190	71.9	770,225	415,839	163	21	37	16.7
	Del., Lack. & Western 1952	963	282,060	302,335	26,318	12,346	67.3	828,511	375,076	71	2	8	9.9
	1951	966	280,637	305,329	32,741	13,194	72.0	848,679	393,071	91	2	16	14.7
	Erie 1952	2,242	556,167	561,548	26,092	30,589	67.6	1,908,047	781,788	156	19	4	2.2
	1951	2,245	623,017	631,175	32,493	34,274	68.1	2,131,812	879,958	188	31	22	9.1
	Grand Trunk Western 1952	952	260,127	262,406	1,959	8,279	60.5	582,930	238,171	59	..	12	16.9
	1951	971	282,944	287,667	3,041	9,883	64.2	670,539	292,000	61	..	13	17.6
	Lehigh Valley 1952	1,207	228,438	233,232	11,191	10,340	67.0	722,600	327,363	37	..	2	5.1
	1951	1,216	242,405	252,528	17,244	12,340	70.1	805,539	378,319	43	5	7	12.7
	New York Central 1952	10,653	2,758,464	2,848,051	127,731	100,120	60.9	7,173,971	3,168,089	847	115	307	24.2
	1951	10,677	3,050,349	3,221,448	168,867	115,083	63.8	8,105,021	3,647,540	977	33	390	27.9
	New York, Chic. & St. L. 1952	2,161	749,327	770,244	11,097	28,189	64.0	1,969,097	869,218	192	15	40	16.2
	1951	2,161	814,547	837,038	14,137	32,048	67.8	2,196,135	978,544	205	9	42	16.4
	Pitts. & Lake Erie 1952	221	80,821	82,433	12	3,530	65.5	301,003	182,303	33	..	14	29.8
	1951	221	97,192	100,177	93	3,953	65.0	343,931	205,054	31	..	17	35.4
	Wabash 1952	2,381	515,706	519,991	7,394	21,927	68.6	1,400,929	578,639	104	29	36	21.3
	1951	2,381	554,627	561,496	8,681	23,196	70.5	1,456,748	624,826	137	4	74	34.4
Central Eastern Region	Baltimore & Ohio 1952	6,082	1,556,175	1,757,719	174,740	55,111	63.2	4,778,282	2,337,208	555	64	158	20.3
	1951	6,083	1,759,867	2,029,115	208,095	69,864	64.7	5,203,915	2,601,367	649	137	170	17.8
	Central of New Jersey 1952	411	70,068	70,249	3,676	2,663	68.7	194,072	102,114	33	..	1	2.9
	1951	410	73,290	73,594	3,609	2,984	68.5	223,450	119,016	42	1	8	15.7
	Central of Pennsylvania 1952	207	62,441	67,331	8,477	2,445	67.6	179,021	95,276	32	4	7	16.3
	1951	210	66,594	71,598	10,707	2,622	70.8	185,989	98,902	28	1	16	35.6
	Chicago & Eastern Ill. 1952	868	119,243	119,243	3,283	4,541	66.7	301,947	142,345	26	..	1	3.7
	1951	886	123,486	123,486	3,328	5,141	67.9	334,905	158,155	26	..	2	7.1
	Elgin, Joliet & Eastern 1952	236	84,857	85,333	28	2,891	65.5	225,386	121,609	40	..	2	4.8
	1951	238	95,343	96,399	350	3,802	67.7	292,286	160,639	39	..	4	9.3
	Pennsylvania System 1952	9,961	3,019,825	3,252,913	327,250	125,030	63.1	9,061,742	4,297,233	1,109	71	322	21.4
	1951	10,045	3,222,971	3,505,228	372,592	138,718	68.1	9,562,020	4,702,885	1,279	35	283	17.7
	Reading 1952	1,320	357,482	364,643	24,884	13,321	63.3	1,049,925	559,308	189	13	22	9.8
	1951	1,311	372,527	382,201	30,737	14,233	66.6	1,102,420	591,085	171	28	44	18.1
	Western Maryland 1952	836	187,188	214,270	24,269	6,427	64.0	523,526	292,712	125	6	19	12.7
	1951	837	186,965	216,301	23,182	6,850	65.2	550,604	308,158	121	11	23	14.8
Pocahontas Region	Chesapeake & Ohio 1952	5,037	1,318,780	1,375,140	46,122	60,120	57.2	5,173,702	2,880,813	456	68	214	29.0
	1951	5,042	1,436,871	1,505,336	64,604	64,848	57.8	5,496,314	3,028,759	499	11	250	32.9
	Norfolk & Western 1952	2,113	674,107	710,681	50,122	31,353	58.7	2,803,567	1,524,139	245	23	16	5.6
	1951	2,113	730,866	775,330	57,790	35,008	59.3	3,077,151	1,679,107	236	19	22	7.9
Southern Region	Atlantic Coast Line 1952	5,461	917,485	917,602	11,435	29,286	59.5	2,114,311	950,960	280	23	37	10.9
	1951	5,434	932,339	938,040	16,191	28,991	62.1	2,002,797	892,103	350	17	103	21.9
	Central of Georgia 1952	1,754	236,436	237,775	4,270	7,905	67.6	542,609	256,574	91	1	4	4.2
	1951	1,765	304,102	307,062	5,323	8,333	69.9	550,154	259,837	109	3	7	5.9
	Gulf, Mobile & Ohio 1952	2,830	313,148	313,148	92	15,987	71.7	1,056,128	516,819	84	..	2	2.3
	1951	2,851	325,583	325,583	190	16,945	73.0	1,089,241	523,375	80	..	3	3.6
	Illinois Central 1952	6,539	1,502,949	1,511,247	51,915	51,972	62.7	3,800,878	1,758,303	575	6	77	11.7
	1951	6,539	1,522,804	1,529,120	53,000	54,311	64.5	3,874,664	1,807,598	574	2	77	11.8
	Louisville & Nashville 1952	4,756	965,249	1,008,523	25,545	33,979	63.8	2,511,111	1,262,460	262	77	53	13.5
	1951	4,769	1,067,461	1,143,205	30,374	34,904	65.9	2,517,431	1,268,040	314	11	135	29.3
	Nash., Chatt. & St. Louis 1952	1,032	202,358	205,789	3,678	6,577	71.6	435,514	211,563	52	9	2	3.2
	1951	1,049	206,121	210,516	4,132	6,810	74.4	430,829	207,657	72	..	7	8.9
	Seaboard Air Line 1952	4,135	767,818	775,419	4,567	28,131	63.5	2,029,652	914,177	200	43	33	12.0
	1951	4,136	789,567	811,811	5,013	27,350	64.3	1,916,824	842,690	229	37	58	17.9
	Southern 1952	6,264	1,120,463	1,120,706	12,311	40,504	69.3	2,605,423	1,193,606	325	54	79	17.2
	1951	6,302	1,292,006	1,298,672	13,289	43,944	70.2	2,769,092	1,259,157	395	5	182	31.3
Northwestern Region	Chicago & North Western 1952	7,889	745,547	754,839	19,533	27,597	68.0	1,913,387	855,507	288	13	116	27.8
	1951	7,910	943,868	957,641	25,769	34,436	67.4	2,422,822	1,101,952	329	8	144	29.9
	Chicago Great Western 1952	1,441	139,031	139,159	1,023	7,810	69.1	509,389	225,552	33	..	1	2.9
	1951	1,441	150,125	150,125	11,060	8,964	69.7	586,532	262,068	34	..	1	2.9
	Chic., Milw., St. P. & Pac. 1952	10,663	1,102,632	1,136,557	38,108	42,649	66.2	2,898,092	1,309,043	398	50	74	14.2
	1951	10,664	1,284,946	1,348,302	50,903	48,819	64.2	3,375,655	1,522,887	429	50	89	15.7
	Chic., St. P., Minn. & Omaha 1952	1,606	161,896	165,363	7,644	4,462	67.9	303,994	144,475	59	1	44	42.3
	1951	1,606	211,554	219,894	12,072	5,829	64.7	413,607	185,580	72	..	28	28.0
	Duluth, Missabe & Iron Range 1952	567	136,893	137,945	1,498	6,008	50.3	624,266	372,207	76	..	5	6.2
	1951	565	147,095	148,536	1,451	6,359	51.3	567,946	386,284	63	..	10	13.7
	Great Northern 1952	8,181	1,004,280	1,008,976	35,801	40,280	69.5	2,902,327	1,452,780	311	101	83	16.8
	1951	8,220	1,228,459	1,230,996	59,136	48,696	63.3	3,606,528	1,728,277	362	65	72	14.4
	Minneap., St. P. & S. Ste. M. 1952	4,173	383,883	389,760	4,127	12,966	67.0	868,446	415,686	110	..	7	6.0
	1951	4,179	425,067	433,213	6,080	13,754	67.0	923,572	442,697	116	..	15	11.5
	Northern Pacific 1952	6,591	747,990	771,295	33,339	31,516	71.4	2,124,654	1,020,452	330	15	70	16.9
	1951	6,591	915,510	970,111	53,613	35,202	60.4	2,599,652	1,168,289	333	9	64	15.8
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.) 1952	13,072	2,568,476	2,677,551	121,605	105,927	61.4	7,407,107	2,761,615	587	44	147	18.9
	1951	13,096	2,649,340	2,821,819	90,202	110,725	65.6	7,446,319	2,921,151	622	77	155	18.1
	Chic., Burl. & Quincy 1952	8,773	1,052,498	1,057,496	36,699	43,910	66.3	2,965,586	1,343,334	338	50	110	22.1
	1951	8,788	1,207,888	1,219,841	45,869	51,018	65.0	3,528,793	1,603,000	379	30	123	23.1
	Chic., Rock I. & Pac. 1952	7,902	1,026,676	1,032,165	9,407	36,792	61.4	2,656,578	1,104,187	208	22	51	18.1
	1951	7,903	1,120,109	1,144,570	14,557	40,590	63.5	2,744,491	1,232,326	243	22	75	22.1
	Denver & R. G. Wn. 1952	2,333	278,224	306,362	40,298	13,452	73.4	892,884	446,359	90	28	29	19.7
	1951	2,334	302,969	330,415	39,711	13,676	69.5	919,998	442,880	97	43	36	20.5
	Southern Pacific 1952	8,063	2,065,331	2,169,610	278,562	90,444	65.5	6,142,903	2,513,609	643	26	148	18.1
	1951	8,054	2,151,471	2,262,762	276,206	96,292	66.9	6,490,243	2,721,511	743	8	130	14.8
	Union Pacific 1952	9,867	2,062,358	2,141,615	137,995	90,754	70.0	6,024,153	2,769,386	526	92	172	21.8
	1951	9,720	2,549,679	2,655,120	176,910	106,993	65.5	7,318,818	3,180,112	607	39	148	18.6
	Western Pacific 1952	1,190	214,708	216,281	10,293	9,747	69.9	640,013	290,799	37	12	7	12.5
	1951	1,190	219,589	224,312	23,208	11,463	78.0	697,932	333,020	38	17	37	40.2
Southwestern Region	International-Gt. Northern* 1952	1,104	206,011	206,011	521	7,611	62.7	537,713	226,582	51	..	9	15.0
	1951	1,104	227,127	227,127	386	7,557	64.8	551,646	246,133	54	1	13	19.1
	Kansas City Southern 1952	886	168,693	168,698	235	8,811	68.4	610,670	291,899	26	5	7	18.4
	1951	886	184,949	185,893	557	9,685	68.3	654,367	306,412	35	5	23	36.5
	Mo.-Kans.-Texas Lines 1952	3,230	387,822	390,473	6,152	14,414	62.9	976,593	423,178	91	14	6	5.4
	1951	3,230	409,304	412,080	6,286	15,174	65.2	988,781	460,522	87	15	34	25.0
	Missouri Pacific* 1952	6,933	1,212,581	1,217,159	15,524	45,935	64.1	3,185,310	1,382,030	325	10	47	12.3
	1951	6,942	1,312,079	1,337,783	20,830	48,477	66.3	3,272,896	1,437,378	363	2	61	14.3
	Texas & Pacific 1952	1,832	351,650	351,650	6,922	14,706	63.6	1,023,027	393,456	63	12	22	22.7
	1951	1,844	352,100	352,100	11,408	14,005	62.8	985,426	378,678	95	3	..	..
	St. Louis-San Francisco 1952	4,567	624,136	624,794	6,059	22,852	62.9	1,577,743	690,809	183	17	77	27.8
	1951	4,570	674,361	680,110	6,728	24,109	65.9	1,617,880	725,886	198	71	92	25.5
	St. Louis Southw. Lines 1952	1,562	342,395	344,023	4,680	15,440	72.5	934,359	417,671	62	23	11	11.5
	1951	1,562	380,436	384,056	5,163	16,013	74.8	962,238	430,134	75	9	18	17.6
	Texas & New Orleans 1952	4,290	768,671	768,671	20,636	28,357	65.6	1,949,365	852,113	216	..	55	20.3
	1951	4,291	813,633	814,329	17,117	28,827	70.7	1,898,849	857,190	236	..	35	12.9

For the Month of April 1952 Compared with April 1951

Region	Road	Year	Freight cars on line: Home	Foreign	Total	Per Cent B.O.	G.t.m.per train-hr. excl.locos and tenders	G.t.m.per train-mi. excl.locos and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd car-mile	Net ton-mi. per car-day	Car-miles per car-day	Net daily ton-mi. per road-mi.	Train-miles per train-hour	Miles per loco. per day
New Eng. Region	Boston & Maine	1952	1,554	7,814	9,368	2.8	39,735	2,313	958	26.5	906	50.3	5,078	17.2	98.4
		1951	1,301	8,844	10,145	2.4	40,142	2,478	1,019	25.2	918	51.6	5,428	16.2	105.7
	N. Y., N. H. & Htfd	1952	2,135	13,729	15,864	3.6	37,784	2,441	1,022	26.1	634	35.6	5,692	15.5	117.4
		1951	1,377	16,836	18,213	1.5	38,725	2,489	1,087	27.6	614	32.0	6,201	15.6	115.2
Great Lakes Region	Delaware & Hudson	1952	4,511	5,741	10,252	6.0	59,133	3,098	1,627	37.0	1,270	49.9	16,192	19.2	69.9
		1951	2,493	6,268	8,761	5.2	58,971	3,115	1,682	37.2	1,574	58.9	17,480	19.0	50.4
	Del., Lack. & Western	1952	6,075	10,027	16,102	5.1	48,321	2,982	1,350	30.4	760	37.2	12,983	16.5	138.8
		1951	4,979	11,007	15,986	7.6	46,927	3,071	1,422	29.8	805	37.5	13,564	15.5	107.3
	Erie	1952	8,709	18,590	27,299	4.2	60,320	3,460	1,418	25.6	939	54.3	11,623	17.6	119.9
		1951	6,189	21,501	27,690	4.0	60,585	3,447	1,423	25.7	1,030	58.9	13,065	17.7	99.7
	Grand Trunk Western	1952	3,686	8,084	11,770	4.2	47,121	2,257	922	28.8	689	39.6	8,339	21.0	135.6
		1951	3,448	9,811	13,259	5.5	48,643	2,401	1,046	29.5	675	35.6	10,024	20.5	139.2
	Lehigh Valley	1952	2,048	12,940	14,988	6.4	62,487	3,213	1,456	31.7	730	34.4	9,041	19.8	221.7
		1951	3,610	11,647	15,257	6.9	66,939	3,367	1,581	30.7	837	39.0	10,371	20.1	157.8
	New York Central	1952	62,848	85,242	148,090	8.1	45,669	2,645	1,168	31.6	695	36.1	9,913	17.6	85.5
		1951	51,683	123,066	174,749	4.7	43,876	2,697	1,214	31.7	697	34.5	11,388	16.5	89.4
	New York, Chic. & St. L.	1952	7,575	17,220	24,795	6.0	47,864	2,672	1,179	30.8	1,153	58.4	13,408	18.2	134.6
		1951	4,709	19,733	24,442	3.3	49,651	2,740	1,221	30.5	1,258	60.8	15,094	18.4	119.4
	Pitts. & Lake Erie	1952	3,414	7,920	11,334	10.0	56,420	3,730	2,259	51.6	477	14.1	27,497	15.1	62.8
		1951	3,357	10,059	13,416	11.4	51,773	3,549	2,116	51.9	503	14.9	30,928	14.6	81.3
	Wabash	1952	7,632	11,701	19,333	4.8	60,594	2,735	2,129	26.4	1,011	55.9	8,101	22.3	110.3
		1951	6,079	13,465	19,544	2.7	56,139	2,652	1,137	26.9	1,092	57.5	8,747	21.4	94.1
Central Eastern Region	Baltimore & Ohio	1952	52,830	43,327	96,157	6.0	44,581	3,111	1,522	42.4	833	31.1	12,809	14.5	84.4
		1951	44,132	59,645	103,777	5.2	41,679	2,999	1,499	37.2	811	33.7	14,255	14.1	81.7
	Central of New Jersey	1952	460	9,040	9,500	2.7	34,650	2,878	1,515	38.3	364	13.8	8,282	12.5	103.3
		1951	336	9,146	9,482	3.1	41,227	3,210	1,710	39.9	423	15.5	9,676	13.5	81.5
	Central of Pennsylvania	1952	1,792	2,950	4,742	19.3	40,366	3,046	1,621	39.0	632	24.0	15,342	14.1	74.0
		1951	1,383	3,158	4,541	18.1	43,334	3,003	1,597	37.7	698	26.1	15,699	15.5	73.5
	Chicago & Eastern Ill.	1952	3,028	3,190	6,218	4.6	44,411	2,539	1,197	31.3	784	37.5	5,466	17.5	151.8
		1951	1,510	3,505	5,015	8.9	46,187	2,724	1,286	30.8	988	47.3	5,950	17.0	155.0
	Elgin, Joliet & Eastern	1952	6,669	11,621	18,290	3.8	20,296	2,727	1,472	42.1	223	8.1	17,176	7.6	91.9
		1951	5,874	17,156	23,030	2.6	20,208	3,199	1,758	42.3	234	8.2	22,498	6.6	112.6
	Pennsylvania System	1952	93,554	121,815	215,369	9.0	49,660	3,082	1,462	34.4	668	30.8	14,380	16.5	86.6
		1951	90,061	115,904	205,965	9.4	45,882	3,056	1,503	33.9	756	32.8	15,606	15.5	87.5
	Reading	1952	14,751	17,635	32,386	3.6	38,911	2,938	1,565	42.0	577	21.7	24,124	13.2	68.3
		1951	10,678	22,205	32,883	3.2	38,606	2,960	1,587	41.5	615	22.2	15,029	13.0	69.2
	Western Maryland	1952	5,578	3,003	8,581	2.9	41,051	2,840	1,588	45.5	1,082	37.1	11,761	14.7	57.4
		1951	4,615	3,524	8,139	3.0	43,571	3,008	1,684	45.0	1,238	42.2	12,272	14.8	56.0
Pocahontas Region	Chesapeake & Ohio	1952	53,831	25,495	79,326	4.1	69,747	3,957	2,204	47.9	1,220	44.5	19,064	17.8	70.3
		1951	50,386	26,021	76,407	5.1	64,829	3,866	2,131	46.7	1,337	49.5	20,024	16.9	74.2
	Norfolk & Western	1952	34,727	7,331	42,058	2.7	69,115	4,241	2,306	48.6	1,204	42.2	24,044	16.6	97.8
		1951	29,624	8,434	38,058	3.2	70,762	4,268	2,329	48.0	1,464	51.4	26,489	16.8	107.0
Southern Region	Atlantic Coast Line	1952	14,884	19,130	34,014	3.5	38,563	2,310	1,039	32.5	920	47.6	5,805	16.7	101.4
		1951	11,311	20,427	31,738	2.4	34,702	2,159	692	30.8	948	49.7	5,472	16.2	74.7
	Central of Georgia	1952	3,050	5,728	8,778	5.9	39,880	2,307	1,091	32.5	974	44.4	4,876	17.4	90.6
		1951	2,085	7,009	9,094	2.5	32,488	1,820	860	31.2	969	44.4	4,907	18.0	93.9
	Gulf, Mobile & Ohio	1952	4,391	10,117	14,508	4.1	65,811	3,380	1,654	32.3	1,185	51.1	6,087	19.5	130.6
		1951	2,748	11,084	13,832	2.6	64,513	3,353	1,611	30.9	1,272	56.4	6,119	19.3	140.2
	Illinois Central	1952	27,387	27,902	55,289	2.3	44,061	2,571	1,189	33.8	1,061	50.0	8,963	17.4	85.2
		1951	21,014	33,041	54,055	2.2	46,100	2,578	1,203	33.3	1,065	49.6	9,214	18.1	85.9
	Louisville & Nashville	1952	31,600	16,329	47,929	6.2	41,487	2,606	1,310	37.2	880	37.1	8,848	15.9	96.3
		1951	30,720	16,910	47,630	8.7	37,011	2,366	1,192	36.3	860	35.9	8,863	15.7	92.3
	Nash., Chatt. & St. Louis	1952	1,951	4,446	6,397	4.7	41,700	2,157	1,048	32.2	1,082	47.0	6,833	19.4	121.9
		1951	1,095	5,121	6,216	3.3	41,200	2,096	1,010	30.5	1,104	48.7	6,599	19.7	86.9
	Seaboard Air Line	1952	11,037	15,686	26,723	1.8	48,963	2,695	1,214	32.5	1,115	54.0	7,369	18.5	106.8
		1951	8,992	15,306	24,298	2.3	45,055	2,482	1,091	30.8	1,136	57.3	6,792	18.6	94.5
	Southern	1952	14,174	27,900	42,074	3.5	40,495	2,337	1,071	29.5	942	46.1	6,352	17.4	89.2
		1951	13,094	29,296	42,390	3.6	36,863	2,161	983	28.7	982	48.8	6,660	17.2	80.7
Northwestern Region	Chicago & North Western	1952	22,108	31,121	53,229	3.4	41,207	2,683	1,199	31.0	556	26.4	3,615	16.1	66.1
		1951	15,955	33,894	49,849	4.1	40,783	2,704	1,230	32.0	719	33.3	4,644	15.9	75.8
	Chicago Great Western	1952	1,717	5,176	6,893	2.8	64,211	3,678	1,628	28.9	1,147	57.5	5,217	17.5	142.9
		1951	1,078	5,241	6,319	3.0	65,366	3,933	1,757	29.2	1,206	59.2	6,062	16.7	152.2
	Chic., Milw., St. P. & Pac.	1952	34,157	31,015	65,172	2.9	44,656	2,652	1,198	30.7	686	33.8	4,092	17.0	81.0
		1951	24,486	41,682	66,168	2.6	43,753	2,648	1,194	31.2	771	38.5	4,760	16.7	87.6
	Chic., St. P., Minn. & Omaha	1952	969	8,048	9,017	3.4	29,523	1,954	929	32.4	528	24.0	2,999	15.7	61.6
		1951	1,021	9,377	10,398	2.7	26,919	2,025	908	31.8	600	29.1	3,852	13.8	85.7
	Duluth, Missabe & Iron Range	1952	14,800	1,209	16,009	3.1	81,042	4,846	2,889	62.0	785	25.2	21,882	17.8	65.0
		1951	12,940	2,115	15,055	1.8	65,161	4,060	2,761	60.7	877	28.1	22,790	16.9	85.1
	Great Northern	1952	23,837	17,471	41,308	3.8	46,383	2,925	1,464	36.1	1,150	45.9	5,919	16.0	75.1
		1951	18,124	27,732	45,856	3.7	46,906	2,974	1,425	35.5	1,366	60.8	7,008	16.0	92.9
	Minneap., St. P. & S. Ste. M.	1952	6,712	7,766	14,478	7.0	43,372	2,276	1,089	32.1	943	43.9	3,320	19.2	117.7
		1951	5,456	10,660	16,116	6.7	42,979	2,197	1,053	32.2	880	40.8	3,531	19.8	127.5
	Northern Pacific	1952	20,081	14,653	34,734	6.0	50,368	2,860	1,374	32.4	949	41.0	5,161	17.7	70.5
		1951	15,131	21,613	36,744	4.5	49,592	2,868	1,289	33.2	1,147	57.2	5,909	17.5	91.0
Central Western Region	Atch., Top. & S. Fe (incl. G. C. & S. F. and P. & S. F.)	1952	52,090	34,600	86,690	4.1	62,289	2,897	1,080	26.1	1,112	69.5	7,042	21.6	125.4
		1951	43,164	39,642	82,806	4.3	59,776	2,823	1,108	26.4	1,197	69.2	7,435	21.3	118.4
	Chic., Burl. & Quincy	1952	18,024	25,626	43,650	4.6	55,483	2,823	1,279	30.6	1,050	51.8	5,104	19.7	76.9
		1951	13,797	28,641	42,438	3.5	54,858	2,934	1,333	31.4	1,256	61.5	6,080	18.8	82.3
	Chic., Rock I. & Pac.	1952	12,876	23,325	36,201	3.1	49,384	2,601	1,081	30.0	1,019	55.4	4,658	19.1	128.5
		1951	9,011	25,210	34,221	3.0	46,176	2,459	1,104	30.4	1,191	61.8	5,198	18.8	121.3
	Denver & R. G. Wn.	1952	8,064	6,750	14,814	2.8	54,953	3,219	1,609	33.2	996	40.9	6,377	17.1	82.6
		1951	7,631	5,871	13,502	3.2	54,788	3,051	1,468	32.4	1,113	49.4	6,325	18.0	76.5
	Southern Pacific	1952	28,843	51,582	80,425	2.6	52,212	3,012	1,233	27.8	1,091	59.9	10,392	17.6	107.1
		1951	23,059	50,050	73,109	3.0	52,215	3,055	1,281	28.3	1,303	68.9	11,264	17.3	103.4
	Union Pacific	1952	31,240	32,695	63,935	2.4	66,357	2,958	1,360	30.5	1,433	67.0	9,356	22.7	99.6
		1951	25,740	41,794	67,534	2.2	63,899	2,916	1,267	29.7	1,625	83.5	10,906	22.3	123.6
	Western Pacific	1952	2,253	3,185	5,438	6.6	69,325	2,999	1,363	29.8	1,833	87.8	8,146	23.3	141.7
		1951	1,383	4,848	6,231	7.5	72,235	3,187	1,521	29.1	1,846	81.5	9,328	22.7	90.5
Southwestern Region	International-Gt. Northern*	1952	1,028	8,306	9,334	2.4	52,904	2,630	1,108	29.8	839	45.0	6,841	20.3	123.5
		1951	855	7,306	8,161	2.1	48,676	2,456	1,096	32.6	1,027	48.7	7,431	120.0	121.7
	Kansas City Southern	1952	1,371	5,946	7,317	5.6	70,305	3,642	1,741	33.1	1,280	56.5	10,982	19.4	155.9
		1951	970	5,912	6,882	3.6	69,769	3,564	1,669	31.6	1,409	65.3	11,528	19.7	110.2
	Mo.-Kans.-Texas Lines	1952	4,201	6,518	10,719	6.3	51,688	2,521	1,092	29.4	1,263	68.4	4,367	20.5	131.2
		1951	2,346	7,376	9,722	4.0	49,397	2,420	1,127	30.3	1,544	78.0	4,753	20.4	109.8
	Missouri Pacific*	1952	20,465	16,233	36,698	3.1	55,976	2,644	1,147	30.1	1,278	66.2	6,645	21.3	114.8
		1951	14,106	19,090	33,196	2.5	51,505	2,508	1,101	29.7	1,426	72.5	6,902	20.6	113.5
	Texas & Pacific	1952	2,178	7,092	9,270	4.8	64,402	2,916	1,121	26.8	1,345	79.1	7,159	22.1	134.6
		1951	1,891	8,180	10,071	5.5	59,890	2,807	1,079	27.0	1,261	74.3	6,845	21.4	136.9
	St. Louis-San Francisco	1952	10,928	12,809	23,737	2.8	47,238	2,439	1,112	30.2	962	50.6	5,042	18.7	84.4
		1951	6,857	14,668	21,525	3.6	43,109	2,403	1,078	30.1	1,099	55.4	5,295	18.0	69.8
	St. Louis Southw. Lines	1952	2,288	5,167	7,455	2.3	56,300	2,730	1,220	27.1	1,956	99.7	8,913	20.6	130.8
		1951	1,386	5,604	6,990	1.8	51,186	2,538	1,134	26.9	2,068	102.9	9,179	20.2	136.1
	Texas & New Orleans	1952	4,979	18,026	23,005	2.8	48,972	2,557	1,118	30.0	1,218	61.8	6,621	19.3	101.5
		1951	3,018	17,707	20,725	2.8	46,635	2,357	1,064	29.7	1,397	66.5	6,659	20.0	107.2

*Report of trustee or trustees.

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